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North Carolina State College
of
Agriculture and Engineering
of
The University of North Carolina

THE SCHOOL OF AGRICULTURE AND FORESTRY
DEPARTMENT OF EDUCATION
THE SCHOOL OF ENGINEERING
THE SCHOOL OF SCIENCE AND BUSINESS
THE TEXTILE SCHOOL
GRADUATE INSTRUCTION
COLLEGE EXTENSION
THE SUMMER SCHOOL

1936-1937

APRIL, 1936
STATE COLLEGE STATION
RALEIGH

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COLLEGE CALENDAR

1936-37

1936

First Term

Sept. 10, Thursday, 3:00 p.m.—College Faculty Meeting
Sept. 11, Friday—Registration of Freshmen
Sept. 14, 15, Monday and Tuesday—Admission of students from other institutions presenting credits for advanced standing
Sept. 16, Wednesday—*Registration of Sophomores, Juniors, Seniors, and Graduate Students
Sept. 17, Thursday—Class work begins
Sept. 26, Saturday, 12:00 Noon—Last day in the first term for registration or for changes in registration
Nov. 2, Monday—Mid-term reports due
Nov. 11, Wednesday (not a holiday)—Observance of Armistice Day
Nov. 26, Thursday—Thanksgiving holiday
Dec. 16, Wednesday—First term ends

1937

Second Term

Jan. 4, Monday—*Second term registration of all students
Jan. 5, Tuesday—Class work begins
Jan. 9, Saturday, 12:00 Noon—Last day in the second term for registration or for changes in registration
Feb. 8, Monday—Mid-term reports due
Mar. 18, Thursday—Second term ends

Third Term

Mar. 23, Tuesday—*Third term registration of all students
Mar. 24, Wednesday—Class work begins
Mar. 29, Monday—Last day in the third term for registration or for changes in registration
Apr. 14, Wednesday (not a holiday)—Observance of Scholarship Day
Apr. 26, Monday—Mid-term reports due
June 4, Friday—Third term ends
June 6, 7, Sunday and Monday—Commencement Exercises
June 9, Wednesday—*Registration for Summer School
June 10, Thursday—Class work begins
July 20, Tuesday—Summer term ends

Final examinations are held on the five school days preceding the end of each term.

*An extra fee is charged for registration after the day designated for registration.

1936

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I. O. Schaub.....Director
John W. Goodman.....Assistant to Director
Jane S. McKimmon.....Assistant Director
C. R. Hudson.....State Agent, Negro Work
A. F. Bowen.....Treasurer
Emma Young.....Auditor
F. H. Jeter.....Agricultural Editor

AGRONOMY

E. C. Blair.....Extension Agronomist
E. Y. Floyd.....Extension Agronomist in Tobacco Culture

ANIMAL HUSBANDRY

J. A. Arey.....In Charge of Office of Dairy Extension
F. R. Farnham.....Dairy Extension
A. C. Kimrey.....Assistant in Dairy Extension
W. L. Clevenger.....Dairy Extension
W. W. Shay.....In Charge of Office of Swine Extension
H. W. Taylor.....Assistant in Swine Extension
C. F. Parrish.....In Charge of Office of Poultry Extension
C. J. Maupin.....Assistant in Poultry Extension
L. I. Case.....Extension Specialist in Beef, Cattle and Sheep

ENTOMOLOGY

C. H. Brannon.....Extension Entomologist
C. L. Sams.....Specialist in Beekeeping

HOME ECONOMICS

Mrs. Cornelia C. Morris.....Extension Economist in Food Conservation and Marketing
Miss Mary E. Thomas.....Extension Nutrition Specialist
Miss Sallie Brooks.....Assistant Nutrition Specialist
Miss Willie N. Hunter.....Extension Clothing Specialist
Miss Julia McIver.....Assistant Clothing Specialist
Miss Pauline Gordon.....Extension Specialist in Home Management and House Furnishings
Miss Mamie Whisnant.....Assistant Specialist in Home Management

HORTICULTURE

E. B. Morrow.....Extension Horticulturist
H. R. Niswonger.....Extension Horticulturist
F. S. Sloan.....Assistant Extension Horticulturist

MISCELLANEOUS

R. W. GRAEBER.....Extension Forester
L. R. HARRILL.....State Club Leader
J. F. CRISWELL.....Farm Management Specialist
J. W. JOHANSEN.....Extension Economist for Organization and Credit
E. R. RANEY.....Extension Agricultural Engineer
D. E. JONES.....Rural Electrification Specialist
RUFUS PAGE.....Assistant Extension Forestry Specialist
A. O. ALFORD.....Assistant Agricultural Editor
R. A. KLUTTZ.....Assistant Agricultural Editor
E. S. KNIGHT.....Assistant Agricultural Editor—Radio
RUSSELL G. BROADDUS.....Extension Agricultural Engineer
LUTHER SHAW.....Extension Plant Pathologist
H. M. ELLIS.....State Compliance Supervisor

FARM DEMONSTRATION WORK

DISTRICT AGENTS

L. B. Altman, Southwestern District.....Raleigh, N. C.
R. W. Shoffner, Assistant, Southwestern District.....Raleigh, N. C.
O. F. McCrary, Northwestern District.....Raleigh, N. C.
E. W. Gaither, Southeastern District.....Raleigh, N. C.
B. Troy Ferguson, Northeastern District.....Raleigh, N. C.

COUNTY AGENTS

County	*Name*	*Post office*
Alamance	N. C. Shiver	Graham
Alamance	W. H. Kimbey (Assistant)	Graham
Alamance	H. G. Dargan (Assistant)	Graham
Alexander	J. F. Brown	Taylorsville
Alleghany	R. E. Black	Sparta
Anson	J. W. Cameron	Wadesboro
Anson	R. E. Davenport (Assistant)	Wadesboro
Avery	C. B. Baird	Newland
Avery	J. W. Woodside (Assistant)	Newland
Beaufort	W. L. McGahey	Washington
Beaufort	W. T. Booker (Assistant)	Washington
Bertie	B. E. Grant	Windsor
Bertie	C. W. Overman (Assistant)	Windsor
Bladen	J. R. Powell	Elizabethtown
Brunswick	J. E. Dodson	Supply
Buncombe	A. W. Nesbitt	Asheville
Buncombe	C. J. Rich (Assistant)	Asheville
Burke	R. L. Sloan	Morganton
Cabarrus	R. D. Goodman	Concord
Caldwell	O. R. Carrithers	Lenoir
Camden	T. McL. Carr	Camden
Carteret	Hugh Overstreet	Beaufort
Caswell	H. L. Seagrove	Yanceyville
Caswell	J. E. Zimmerman (Assistant)	Yanceyville
Catawba	Earle Brintnall	Newton
Chatham	H. M. Singletary	Pittsboro
Cherokee	A. Q. Ketner	Murphy
Cherokee	R. B. Wooten (Assistant)	Murphy
Chowan	N. K. Rowell	Edenton
Clay	D. G. Allison	Hayesville
Clay	W. D. Jester (Assistant)	Hayesville
Cleveland	J. S. Wilkins	Shelby
Cleveland	J. L. Reitzel (Assistant)	Shelby
Columbus	J. P. Quinerly	Whiteville
Columbus	W. H. Shearin (Assistant)	Whiteville
Craven	H. A. Patten	New Bern
Craven	M. A. Morgan (Assistant)	New Bern
Cumberland	J. T. Monroe	Fayetteville

County	*Name*	*Post office*
Currituck	L. A. POWELL	Barco
Davidson	P. M. HENDRICKS	Lexington
Davidson	A. N. HARRELL (Assistant)	Lexington
Davie	R. R. SMITHWICK	Mocksville
Duplin	L. L. McLENDON	Kenansville
Duplin	P. D. MAY (Assistant)	Kenansville
Durham	W. B. PACE	Durham
Durham	C. M. SALLEY (Assistant)	Durham
Edgecombe	J. C. POWELL	Tarboro
Edgecombe	H. E. ALPHIN (Assistant)	Tarboro
Forsyth	R. W. POU	Winston-Salem
Forsyth	C. L. DAVIS (Assistant)	Winston-Salem
Franklin	E. J. MORGAN	Louisburg
Franklin	W. C. BOYCE (Assistant)	Louisburg
Gaston	MAUBY GASTON	Gastonia
Gaston	CLARK McCASLAN (Assistant)	Gastonia
Gates	R. R. RICH	Gatesville
Graham	W. B. WIGGINS	Robbinsville
Granville	DAN M. PAUL	Oxford
Granville	W. B. JONES (Assistant)	Oxford
Greene	E. V. VESTAL	Snow Hill
Guilford	J. I. WAGONER	Greensboro
Guilford	L. M. BOSWELL (Assistant)	Greensboro
Guilford	H. H. TATUM (Assistant)	Greensboro
Halifax	W. O. DAVIS	Weldon
Halifax	FRED JONES (Assistant)	Scotland Neck
Harnett	J. O. ANTHONY	Lillington
Harnett	W. D. REYNOLDS (Assistant)	Lillington
Haywood	W. D. SMITH	Waynesville
Haywood	ROY H. CROUSE (Assistant)	Waynesville
Haywood	S. R. MITCHINER (Assistant)	Waynesville
Henderson	G. D. WHITE	Hendersonville
Henderson	E. H. MEACHAM (Assistant)	Hendersonville
Hertford	J. GORDON BLAKE	Winton
Hoke	H. L. MEACHAM	Raeford
Hyde	C. Y. TILSON	Swan Quarter
Iredell	A. R. MORROW	Statesville
Iredell	W. N. WOOD (Assistant)	Statesville
Iredell	PAUL KISER (Assistant)	Statesville
Jackson	G. R. LACKEY	Sylva
Jackson	H. R. CLAPP (Assistant)	Sylva
Johnston	S. C. OLIVER, JR.	Smithfield
Johnston	J. T. COOPER (Assistant)	Smithfield
Johnston	S. C. WINCHESTER (Assistant)	Smithfield
Johnston	R. M. HOLDER (Assistant)	Smithfield
Jones	F. F. HENDRIX	Trenton
Lee	E. O. McMAHAN	Sanford
Lenoir	C. M. BRICKHOUSE	Kinston

County	*Name*	*Post office*
Lincoln	J. G. MORRISON	Lincolnton
McDowell	S. L. HOMEWOOD	Marion
Macon	S. W. MENDENHALL	Franklin
Macon	S. D. ALEXANDER (Assistant)	Franklin
Madison	G. W. MILLER	Marshall
Madison	K. A. HANEY (Assistant)	Marshall
Martin	T. B. BRANDON	Williamston
Martin	M. L. BARNES (Assistant)	Williamston
Mecklenburg	O. H. PHILLIPS	Charlotte
Mecklenburg	MAX CULP (Assistant)	Charlotte
Montgomery	H. B. JAMES	Troy
Moore	E. H. GARRISON	Carthage
Nash	H. G. WHARTON	Nashville
Nash	R. F. SHEARIN (Assistant)	Nashville
New Hanover	C. R. DILLARD	Wilmington
Northampton	E. P. GULLEDGE	Jackson
Onslow	N. M. SMITH	Jacksonville
Orange	DON S. MATHESON	Hillsboro
Orange	E. P. BARNES (Assistant)	Hillsboro
Pamlico	R. W. GALPHIN	Bayboro
Pasquotank	G. W. FALLS	Elizabeth City
Pender	W. H. ROBBINS	Burgaw
Perquimans	L. W. ANDERSON	Hertford
Person	H. K. SANDERS	Roxboro
Person	J. B. SNIPES (Assistant)	Roxboro
Pitt	E. F. ARNOLD	Greenville
Pitt	C. D. GRIGGS (Assistant)	Greenville
Polk	J. A. WILSON	Columbus
Polk	E. E. ISELEY (Assistant)	Columbus
Randolph	E. S. MILLSAPS	Asheboro
Richmond	A. D. ROBERTSON	Rockingham
Richmond	W. P. ALBRIGHT (Assistant)	Rockingham
Robeson	O. O. DUKES	Lumberton
Robeson	R. B. HARPER (Assistant)	Lumberton
Rockingham	F. S. WALKER	Reidsville
Rockingham	Z. S. JOHNSON (Assistant)	Reidsville
Rowan	D. H. SUTTON	Salisbury
Rowan	R. R. BENNETT (Assistant)	Salisbury
Rutherford	F. E. PATTON	Rutherfordton
Rutherford	J. W. WEBSTER (Assistant)	Rutherfordton
Sampson	J. M. HENLEY	Clinton
Scotland	L. G. MATTHIS	Laurinburg
Stanly	JOHN W. ARTZ	Albemarle
Stokes	S. J. KIRBY	Walnut Cove
Stokes	T. H. SHEARS (Assistant)	Walnut Cove
Surry	J. W. CRAWFORD	Dobson
Surry	W. J. HANNA (Assistant)	Dobson
Swain	BRYAN NESBIT	Bryson City

County	*Name*	*Post office*
Swain	J. B. HIGHSMITH (Assistant)	Bryson City
Transylvania	J. A. GLAZENER	Brevard
Transylvania	W. C. MANESS (Assistant)	Brevard
Tyrrell	H. H. HARRIS	Columbia
Union	T. J. W. BROOM	Monroe
Union	D. C. RANKIN (Assistant)	Monroe
Vance	J. W. SANDERS	Henderson
Wake	J. C. ANDERSON	Raleigh
Wake	J. S. SUGG (Assistant)	Raleigh
Warren	R. H. BRIGHT	Warrenton
Washington	W. V. HAYS	Plymouth
Watauga	W. B. COLLINS	Boone
Watauga	HARRY HAMILTON (Assistant)	Boone
Wayne	C. S. MINTZ	Goldsboro
Wayne	A. S. KNOWLES (Assistant)	Goldsboro
Wilkes	A. G. HENDREN	Wilkesboro
Wilson	W. L. ADAMS	Wilson
Wilson	J. A. MARSH (Assistant)	Wilson
Yadkin	L. F. BRUMFIELD	Yadkinville
Yadkin	R. A. MCLAUGHLIN (Assistant)	Yadkinville
Yancey	G. W. SMITH	Burnsville
Yancey	J. C. LYNN (Assistant)	Burnsville
C. V. MORGAN, County Agent at Large		Raleigh, N. C.
J. P. HERRING, County Agent at Large		Wilmington, N. C.
ZENO MOORE, County Agent at Large		Whitakers, N. C.

NEGRO DEMONSTRATION WORK

C. R. HUDSON, State Agent, Raleigh, N. C.
J. W. MITCHELL, District Agent, A. and T. College, Greensboro, N. C.

Local Agents

Alamance	J. W. JEFFRIES	Graham
Anson	OTIS BUFFALOE	Wadesboro, Box 335
Bertie	J. C. HUBBARD	Windsor
Beaufort	J. R. REDDING	Washington
Craven	R. E. JONES	New Bern, Box 103
Durham	A. T. HAMME	Durham, Box 1015
Edgecombe	F. D. WHARTON	Bricks
Forsyth	H. C. JONES	Winston-Salem, Sta. B.
Gates	H. L. MITCHELL	Gatesville
Guilford	W. B. HARRISON	A. & T. College, Greensboro
Halifax	D. J. KNIGHT	Enfield
Hertford	W. C. DAVENPORT	Winton
Iredell	E. C. LACKEY	Statesville
Johnston	MCKAY MCNEILL	Clayton, Rt. 1
Lenoir	P. G. FULLER	Kinston
Martin	OLIVER CARTER	Parmele

County	*Name*	*Post office*
Mecklenburg	I. D. L. TORRENCE	Charlotte, 229 E. Trade St.
Northampton	L. J. MORRIS	Rich Square
Orange	M. C. BURT	Hillsboro
Pasquotank	E. F. COLSON	Elizabeth City, Box 427
Person	C. J. FORD	Roxboro
Pitt	D. D. DUPREE	Greenville, Box 585
Robeson	S. T. BROOKS	Lumberton, Box 806
Rowan	A. C. GRANT	Salisbury, 904 W. Monroe St.
Vance	H. E. WEBB	Henderson
Wake	L. H. ROBERTS	Raleigh, O'Kelly Bldg.
Warren	C. S. WYNN	Warrenton
Wilson	C. L. SPELMAN	Wilson
Rockingham and Caswell	H. E. SUTTON	Reidsville

NORTH CAROLINA HOME DEMONSTRATION WORK

Mrs. Jane S. McKimmon, Assistant Director of Extension.....Raleigh
Mrs. Estelle T. Smith, Southeastern District Agent.....Raleigh
Miss Anamerle Arant, Northwestern District Agent.....Raleigh
Miss Pauline Smith, Northeastern District Agent.....Raleigh
Miss Ruth Current, Southwestern District Agent.....Raleigh
Mrs. Cornelia C. Morris, Extension Economist in Food Conservation and Marketing.....Raleigh
Miss Mary E. Thomas, Extension Nutrition Specialist.....Raleigh
Miss Sallie Brooks, Assistant Nutrition Specialist.....Raleigh
Miss Willie N. Hunter, Extension Clothing Specialist.....Raleigh
Miss Julia McIver, Assistant Clothing Specialist.....Raleigh
Miss Pauline Gordon, Extension Specialist in Home Management and House Furnishings.....Raleigh
Miss Mamie Whisnant, Assistant Specialist in Home Management.....Raleigh

COUNTY AGENTS

County	*Name*	*Post office*
Alamance	Miss Ann Benson Priest	Graham
Alexander-Caldwell	Miss Atha Culberson	Lenoir
Anson	Mrs. Rosalind Redfearn	Wadesboro
Beaufort	Miss Violet Alexander	Washington
Bladen	Mrs. Lillie L. Hester	Elizabethtown
Brunswick	Miss Marion Smith	Southport
Cabarrus	Mrs. Mary L. McAllister	Concord
Camden	Miss Mary Teeter	Camden
Carteret	Miss Helen M. Dey	Beaufort
Catawba	Mrs. Marie Coxe Matheson	Newton
Caswell	Miss Maude Searcy	Yanceyville
Cherokee-Graham	Miss Pauline Lentz	Murphy
Chowan	Miss Rebecca Colwell	Edenton
Clay-Macon	Mrs. Katharine M. O'Neil	Franklin
Cleveland	Miss Frances McGregor	Shelby
Craven	Miss Jessie Trowbridge	New Bern
Chatham-Orange	Miss Grace E. Holcomb	Pittsboro
Cumberland	Miss Elizabeth Gainey	Fayetteville
Currituck	Miss Virginia Edwards	Currituck
Davie-Yadkin	Miss Florence Mackie	Mocksville
Dare	Miss Alice Carter	Manteo
Duplin	Miss Jayme Martin	Kenansville
Durham	Miss Rose Elwood Bryan	Durham
Edgecombe	Miss Katherine Millsaps	Tarboro
Forsyth	Mrs. Elizabeth Tuttle	Winston-Salem
Franklin	Miss Louise Weaver	Louisburg
Gaston	Miss Virginia Ward	Gastonia
Gates-Perquimans	Miss Gladys Hamerick	Hertford
Guilford	Miss Addie Houston	Greensboro
Halifax	Mrs. Hazel Ervin Wheeler	Roanoke Rapids

County	*Name*	*Post office*
Harnett-Hoke	MISS NAOMI CARR	Lillington
Haywood-Swain	MISS MARY MARGARET SMITH	Waynesville
Hertford	MISS FLORENCE COX	Winton
Iredell	MISS HILDA S. SUTTON	Statesville
Jackson	MRS. MAMIE SUE EVANS	Sylva
Johnston	MISS RACHEL EVERETT	Smithfield
Johnston	MISS DOROTHY BROWN (Assistant)	Smithfield
Jones	MISS MARY EMMA POWELL	Trenton
Lee	MISS CORNELIA SIMPSON	Sanford
Lenoir	MISS MAY SWANN	Kinston
Martin	MISS LORA SLEEPER	Williamston
Mecklenburg	MRS. PAULINE W. TAYLOR	Charlotte
McDowell	MISS ANNE TUCKER	Marion
Montgomery	MISS MARTHA MCKINNON	Troy
Moore	MISS FLORA MCDONALD	Carthage
Nash	MRS. EFFIE V. GORDON	Nashville
New Hanover	MISS ANN MASON	Wilmington
Northampton	MISS MILDRED IVES	Jackson
Onslow	MISS HELEN CARLTON	Jacksonville
Pamlico	MISS GRACE MCCLENNY	Oriental
Pasquotank	MISS MAUDE L. HODGES	Elizabeth City
Pender	MISS GERTRUDE ORR	Burgaw
Pitt	MISS ETHEL NICE	Greenville
Polk	MISS AGNES MCLEOD	Columbus
Richmond	MRS. ANNA LEA HARRIS	Rockingham
Robeson	MISS MARY HUFFINES	Lumberton
Rockingham	MISS MARJORIE HOLMES	Reidsville
Rowan	MISS MARY C. PARRISH	Salisbury
Rutherford	MRS. VIRGINIA S. SWAIN	Rutherfordton
Sampson	MISS MINNIE L. GARRISON	Clinton
Stanly	MISS ELIZABETH BRIDGE	Albemarle
Surry-Stokes	MISS VERNA STANTON	Mount Airy
Vance	MRS. HATTIE F. PLUMMER	Middleburg
Wake	MRS. MAUDE MCINNES	Raleigh
Washington	MISS FRANCES MISENHEIMER	Plymouth
Watauga-Avery	MISS CLEATA JONES	Boone
Wilson	MISS LOIS RAINWATER	Wilson
Union	MRS. PRATT C. MCSWAIN	Monroe

NEGRO HOME DEMONSTRATION WORK

District Agent, MRS. DAZELLE FOSTER LOWE, Greensboro, N. C.

Subject Matter Specialist, MISS WILHELMINA LAWS, A. & T. College, Greensboro, N. C.

Alamance	MRS. CARRIE SPAULDING WILSON	Graham
Bertie	MISS LILLIAN ANDREWS	Windsor
Craven	MISS MARIETTA MEARES	New Bern

County	*Name*	*Post office*
Durham	ESTELLE T. NIXON, Rt. 2, Box 97	Durham
Edgecombe	MISS IDA MAE WILLIAMS	Bricks
Guilford	MISS ANNIE MURRAY	Greensboro
Johnston	MISS LUCY HICKS	Smithfield
Northampton	MRS. FANNIE T. NEWSOME, Box 62	Rich Square
Robeson	MRS. LILLIAN M. DEBNAM	Lumberton
Rowan	MRS. ANNIE J. JOHNSON	Salisbury
Wake	MRS. BERTHA MAYE EDWARDS	Raleigh

GENERAL INFORMATION

HISTORY

The North Carolina State College of Agriculture and Engineering is the outgrowth of an idea fostered by two distinct movements, each somewhat different in its original aims. One movement, represented by a group of progressive young North Carolinians, banded together in Raleigh as the Watauga Club, sought to bring about the organization of an industrial school for the teaching of "woodwork, mining, metallurgy, and practical agriculture." The other movement, originating among the farmers in North Carolina, and actively sponsored by Colonel L. L. Polk, then editor of the *Progressive Farmer*, had as its object the establishment of an agricultural college supported by State appropriations and by the Land Scrip Fund of the Federal Government.

Through the efforts of the Watauga Club, the Legislature of 1885 passed a bill, introduced by Mr. Augustus Leazar, the main features of which provided:

1. "That the Board of Agriculture should seek proposals of donations from the cities and towns of North Carolina, and when an adequate donation should be made by any city or town, there the school should be located, giving the place the preference which offered the greatest inducements."

2. "That the school should be under joint control of the Board of Agriculture and directors from such town or city."

3. "That instruction should be in woodwork, mining, metallurgy, practical agriculture, and such other branches of industrial education as may be deemed expedient."

4. "That the Board of Agriculture should be authorized to apply annually $5,000 of the surplus funds of their department to the establishment and maintenance of said school."

Pursuant to the act of the General Assembly, when proposals for the school were advertised, Charlotte responded with the offer of an eligible site and $5,000 in cash; Kinston offered $10,000; Raleigh offered $5,000 (increased subsequently to $8,000), the Exposition Building at the State Fair Grounds, valued at $3,000; one acre of land, donated by Mr. William Stronach, and the use of twenty acres of land by the Directors of the State Fair.

The location of the College in Raleigh was brought about largely through the efforts of the Industrial School Committee of the City Board of Aldermen. Members of this committee were Messrs. G. E. Leach, F. O. Moring, and J. Stanhope Wynne.

In April, 1886, the committee appeared before the Board of Agriculture and, on behalf of the city of Raleigh, increased the original offer of $5,000 to $8,000. The offer was accepted, and negotiations were pending for letting the contract to build when certain events occurred that changed the whole story of the institution.

Farmers' clubs through North Carolina, and Colonel L. L. Polk, through the columns of the *Progressive Farmer*, had, for some years, advocated

the establishment of an agricultural college which would be supported, in part, by the Federal Land Scrip Fund. On the 18th of January, 1887, a mass meeting of the farmers, held in Raleigh, passed a resolution to the effect that the farmers needed an agricultural college, and "that the Land Scrip Fund be diverted from the University and applied thereto."

On January 18th the following resolution was adopted by the Raleigh Board of Aldermen:

"Inasmuch as the farmers' meeting, recently held in this city, composed of worthy citizens of many counties of the State, resolved to request the General Assembly to establish an Agricultural College, and as there exists a popular impression that the proposed institution will receive the sanction of the Legislature, and as the City of Raleigh has agreed to give the sum of $5,000 in money, together with the building of the State Exposition, and by consent of the directors of the State Fair the use of about 20 acres of land for the establishment of an Industrial School and an experiment farm; and further, that inasmuch as Mr. R. Stanhope Pullen, a citizen of Raleigh, has, through our committee, offered to the Board of Agriculture, whose duty it has become under a statute of the State to appropriate the sum of five thousand dollars annually for the establishment and maintenance of an Industrial School, 8 2/3 acres of valuable land conveniently located for the said school; and finally, as the board believes there exists no good reason why the two enterprises should not be united, it is therefore *Resolved*, That the Board of Aldermen of the City of Raleigh, in view of the foregoing facts, and in order to meet the views of the most important class of our citizens, the farmers, has agreed that should the Legislature conclude to establish an Agricultural College that it would, in their opinion, be the part of wisdom, to accomplish the greatest good to all of our citizens, to unite the Agricultural and Industrial Schools; that should such a course be adopted, they recommend that the combined institution be called the College of Agriculture and Mechanic Arts of North Carolina.

"That should the said institution be established at or adjacent to Raleigh, on land which will be donated for this purpose, that the City of Raleigh will agree that the grants or offers heretofore made to and accepted by the Board of Agriculture shall be applied, with the consent of the said board, to such College of Agriculture and Mechanic Arts of North Carolina.

"*It is further Resolved*, That these resolutions and preamble shall be laid before the General Farmers' Convention, to be held in this city on the 26th inst., for their consideration, and also before the appropriate committee of the General Assembly for their action thereupon.

"The Board of Aldermen learns and states with pleasure, by authority, that R. S. Pullen, who has heretofore offered the Board of Agriculture a tract of land of about 9 acres, which tender meets the approval of the said Board of Agriculture, as the land lies conveniently near the State Experiment Farm, will, in case the above named Agricultural and Mechanical College be established in the same, donate about 60 acres of

land, to include the 9 acres and connected therewith, to the State of North Carolina for the purpose of said College.

"The Board of Aldermen would, therefore, include this generous offer as a part of the grants heretofore tendered, should the combined institution be established with the support of the State of North Carolina.

"The Board of Aldermen would respectfully state that it will meet their approval for the management of the proposed institution to be directed as the wisdom of the General Assembly may determine, and that the City of Raleigh does not insist that any part of the management of the same shall be put under its control."

Two days later, January 26, 1887, another great mass meeting of farmers and working men, called together in Raleigh by Colonel Polk from forty counties, passed the following resolutions:

1. "That the time has come to establish an Agricultural and Mechanical College in accordance with the Land Scrip Act.

2. "That the interest from the Land Scrip Fund should be paid to the College.

3. "That a sufficient amount from the general treasury be appropriated and available convict labor be used to build, equip, and maintain the College.

4. "That the surplus funds of the Agricultural Department be utilized in this connection.

5. "That the payment of the Land Scrip Fund to the College should not diminish the appropriations to the University.

6. "That the fund and property of the Industrial School, including donations of the City of Raleigh, in accordance with a resolution of its Board of Aldermen, be turned over to the proposed college."

The above resolutions were incorporated in a bill which passed its final reading before the General Assembly on March 3, 1887, and the new institution was established as the "North Carolina College of Agriculture and Mechanic Arts."

The dividing line between Pullen Park, the tract of land given to the City of Raleigh by Mr. R. Stanhope Pullen, and the sixty acres donated to the College by the same gentleman, together with the original walks and driveways, were located in this manner: Mr. Pullen walked ahead of a plow, held by a small negro boy, and Mr. J. Stanhope Wynne led the mule over the lines indicated by Mr. Pullen.

The cornerstone of Holladay Hall was laid on August 22, 1888, the address being made by Mr. W. J. Peele, of Raleigh, one of the charter members of the Watauga Club and a staunch supporter of industrial education.

The College opened October 3, 1889, with seventy-two students and a teaching and administrative staff of eight. Alexander Q. Holladay was the first president, 1889-1899; followed by George Taylor Winston, 1899-

1908; Daniel Harvey Hill, 1908-1916; Wallace Carl Riddick, 1916-1923; Eugene Clyde Brooks, 1923—.

The General Assembly of 1917 changed the name of the College to The North Carolina State College of Agriculture and Engineering.

In 1931 the General Assembly passed a law consolidating three of the State's institutions of higher learning. The first section of this law reads as follows:

"That the University of North Carolina, the North Carolina State College of Agriculture and Engineering, and the North Carolina College for Women are hereby consolidated and merged into 'The University of North Carolina.'" (Chapter 202, Public Laws of North Carolina, 1931.)

ORGANIZATION

The College comprises the School of Agriculture and Forestry, the School of Engineering, the School of Science and Business, the Textile School, the Department of Education, Graduate Instruction, College Extension, the Agricultural Experiment Station, the Agricultural Extension Service, and the Summer School. The Engineering Experiment Station is an integral part of the School of Engineering, and Textile Research of the Textile School. In each of the undergraduate schools are the departments which furnish the courses of instruction. The courses offered in each are grouped according to definite vocational aims, and students entering will be directed first to elect a vocation. This selection determines the program of studies to be pursued.

There are thirty-six major vocations open to young men in the State, for which State College offers from four to seven years training for technical, scientific, and professional service. Thirty years ago these vocations, when filled at all, were filled for the most part by unskilled workers. But the world has moved rapidly during this period of thirty years. Many new discoveries and inventions have been made, and many new social combinations have been effected, requiring a better understanding of human relationships and the need of business and social coöperation. As a result, there has developed a great body of technical and professional knowledge derived from new experiences, and leaders in these larger vocations must not only become masters of the essential technical and professional knowledge, but have a clearer understanding of the human relationships demanded in this age, because of the rapidly increasing tendency of human elements to coöperate in large organizations.

These vocations are classed today among the learned professions, and those who would become successful leaders must secure that broader cultural training which will equip them to participate properly in the civic affairs of their communities, because these vocations are having such a tremendous effect upon the civic life of our State and Nation.

LOCATION

The North Carolina State College is located within the limits of the City of Raleigh, a mile and a quarter west of the State Capitol. Of the

four hundred and eighty-six acres of land owned by the College, thirty acres are in the campus, thirty-five in orchards and gardens, fifteen in the poultry yards, and the remainder in the experiment farm.

Varieties of possibilities in agriculture and engineering are found here or within easy reach. The workings of the State Government in all its functions, departments, and institutions can be observed at close range by the students of the College. Few colleges combine in equal degree the opportunities of the country and the advantages of a city as does State College.

BUILDINGS

Holladay Hall contains the executive offices of the Dean of Administration, the Registrar, the Treasurer, the Dean of Students, and the offices and classrooms of the Department of Education, and of the Reserve Officers Training Corps.

Peele Hall is a new three-story building. It contains offices and classrooms of the School of Science and Business.

Primrose Hall has been remodeled for the use of the Department of Geology. It contains offices, classrooms, and laboratories.

Tompkins Hall is occupied exclusively by the Textile School for instruction and research. The building is equipped with a large variety of machinery and apparatus to be used in research and in teaching the latest processes of textile manufacturing and textile chemistry and dyeing.

Winston Hall contains the offices, classrooms, and laboratories for the departments of Chemistry and of Chemical Engineering.

Page Hall houses the department of Mechanical Engineering. It contains offices, drafting rooms, aeronautics laboratory, and classrooms for Mechanical Engineering, and the offices of the Dean of Engineering. It also contains classrooms for Mathematics.

Shops Building. The Shops Building is located south of Page Hall and contains the wood, foundry, forge, and machine shops, and the Mechanical Engineering Instrument Rooms and Laboratory.

Ricks Hall provides offices for the Coöperative Agricultural Extension Service, the Dean of Agriculture and Director of the Agricultural Experiment Station, the Department of Agricultural Economics, Department of Forestry and Poultry Department, together with classrooms and laboratories.

Patterson Hall is occupied by the departments of Agronomy and Botany.

The Zoology Building contains offices for the Director of Instruction of the School of Agriculture, and classrooms and laboratories for the Department of Zoology, and has a modern insectary.

The Ceramics Building contains classrooms, offices, a large machine laboratory with full-size equipment, a large kiln laboratory, and seven small laboratories for special equipment for instruction and research.

Polk Hall contains classrooms, offices, laboratories, and equipment for instruction and research in animal industry and in dairy manufacturing.

It provides the classrooms, museum, and laboratories in instruction and research in Horticulture and Landscape Architecture.

The Electrical Engineering-Physics Building provides modern facilities for Electrical and Architectural Engineering and Physics. It contains classrooms, drawing rooms, offices, and laboratories, designed for instruction and research in these fields.

The Civil Engineering Building houses the departments of Civil and Highway Engineering, including Construction and Sanitary Engineering, Industrial Engineering, and the Engineering Experiment Station.

The first floor is occupied on the south end by the Engineering Experiment Station, consisting of offices, laboratories, and museum, and the office of the N. C. Board of Registration for Engineers and Land Surveyors. The north end contains the highway laboratory and computation rooms, with modern equipment and apparatus for this division.

The east side provides for department shops and surveying instruments. On the second floor are the offices and classrooms, two large drawing rooms, a general assembly room, permanent record rooms, and blue-print room.

The D. H. Hill Library, completed in 1926, is a structure of recognized architectural beauty, designed in the post-colonial of the Jeffersonian period, the style of Monticello and of the buildings of the University of Virginia. It consists of a large portico of Georgia marble columns and the usual Colonial type of brick. It is simple and dignified in its treatment.

Pullen Hall, the College Auditorium, has a seating capacity of 1,000. The space on the lower floors contains classrooms and offices used by the department of English.

The Dining Hall consists of two wings, each 133 by 54 feet, connected by a large, well-equipped kitchen and serving pantry. In the basement there is a bakery, a cold storage plant, ample storerooms, the Students Supply Store, and the College Laundry. In the dining-rooms there are accommodations for 1,600 students. There is operated in this building modern cafeterias, supplying to those students who do not care to avail themselves of the regular dining service a place to secure meals at moderate cost. The equipment throughout is of the latest type.

The Infirmary, a two-story brick building with wards, single rooms, diet kitchen and offices, is well equipped to care for student patients.

The Student Activity Building (formerly First Dormitory), provides offices for all student publications: *Agriculturist*, *Agromeck*, *Southern Engineer*, *Technician*, *and Wataugan*. The building also provides headquarters for Student Government.

The Frank Thompson Gymnasium, opened for use in 1924, is one of the largest and best-equipped gymnasiums in the South. The gymnasium proper has a playing floor 110 x 130 feet, large enough to accommodate three full-size basketball courts. About 2,500 spectators can be seated at indoor contests. In addition, there is an auxiliary gymnasium which

is used for recreation by the students and faculty members and by the smaller classes in physical training. The swimming pool, 75 x 35 feet, handsomely tiled, is located under its own glass roof, but is connected with the basement proper, which contains ample showers, lockers, storerooms, varsity training rooms, and rooms for visiting athletic teams. Classrooms and offices are on the first floor.

The Young Men's Christian Association Building is the home of the greater part of voluntary student activities. The main floor has a large lobby, with open reading and game rooms, an auditorium, a banquet hall, several bedrooms for visitors, and offices of the association and of the College publications. The upper floor contains two large society halls and rooms for Bible study classes.

The Central Heating Plant furnishes light, heat, and power to all the buildings. The plant and its equipment are of modern type, and so arranged as to be used for instruction.

Barns, Greenhouses, and Poultry Plants. In addition, there are a number of service buildings for the different departments of the College. The College barns house the dairy herd, the work animals, and the sheep and swine herds. There are six greenhouses on the campus operated in conjunction with the instruction and research in horticulture, zoology, and botany. A poultry plant is provided, with ample buildings including an incubator and feed house, judging laboratory, and a fattening and storage house. Breeding houses for special matings and experimental work and four large houses in which the four special strains of S. C. Rhode Island Red, White Wyandotte, S. C. White Leghorn, and Barred Plymouth Rock are bred.

THE DORMITORIES

The College has sufficient dormitory space to house comfortably a thousand students. The dormitories are operated under the direction of the Superintendent of Buildings.

FRESHMAN HOUSING

Freshmen, with the exception of certain self-help students and those students desiring to live with relatives, are required to room in the Freshman Quadrangle, consisting of Fourth, Fifth, Sixth, and South Dormitories. A group of faculty members and appointed seniors with high rating live in the Quadrangle to serve as personal counsellors to new students.

Fourth Dormitory contains rooms with hot and cold running water, and new bathrooms, conveniently located, have been installed. The building is three stories in height and accommodates 46 students.

Fifth and Sixth Dormitories, each three stories in height, provide quarters, together, for 144 students. Bathrooms are located on each floor, and both buildings are of fireproof construction.

Seventh Dormitory is three stories high and has one hundred rooms, and will accommodate 200 students. Each room has running water, and

tiled bathrooms are located in each section on each floor. The building is of fireproof construction.

South Dormitory is four stories in height and accommodates 228 students. There is a tiled bathroom in each section.

1911 Dormitory has three stories and houses 240 students. Its remodeling was completed in the summer of 1930.

Watauga Hall has 54 rooms, is three stories high, and accommodates 108 students. Tiled baths are installed, and with its central location it is now one of the most desirable college homes on the campus.

LABORATORIES, SHOPS, AND FACILITIES

Aeronautical Engineering

The Aeronautics laboratories are located in the basement of Page Hall. These laboratories are equipped with different types of airplane engines, instruments, airplanes, airplane parts and an open type thirty-inch wind tunnel. A number of models are available for use in connection with the wind tunnel. There is equipment for research work by graduate students.

Agricultural Economics and Rural Sociology

The Department of Agricultural Economics and Rural Sociology is supplied with modern laboratory facilities. The department has at its disposal several large well-lighted rooms for offices, classrooms, and laboratories. By special arrangement with one of the large calculating manufacturing companies, the supply of calculators is adjusted to the need for them. In addition the department is supplied with adding machines and other calculating devices, including an 80-column Hollerith tabulating and sorting machine. Charts on practically every phase of agricultural economics are in the possession of the department or are available to it through the courtesy of the United States Department of Agriculture. A large number of maps of farms located in various parts of the State are also available for study and to use for purpose of illustration of principles and practices. For the study of farm management and farm organization, the department has collected during the past five years detailed records on approximately one hundred farms. An up-to-date file of bulletins is maintained for reference, covering all phases of agricultural economics and rural sociology.

In reality, the State is a laboratory of the department. The department is constantly making studies in economics of production, marketing, finance, taxation, and prices, as well as studies in such rural social problems as rural population, rural organization, family living, and community life. All of these studies furnish material for the student, and also for the instructor in preparing and developing the courses of instruction. It is significant to note that much of this work is done in coöperation with the United States Department of Agricultural Economics. This arrangement brings the student in contact with officials in the department, and also supplements the department's personnel.

Agronomy

Field Crops.—The equipment for teaching Field Crops consists of standard apparatus and official types for the study and determination of the market grades of cotton, tobacco, corn, small grains, and forage crops. Other equipment consists of a specimen garden located on the College farm; specimens of cultivated varieties of field crops and their seeds.

Soils.—The soils laboratories are equipped with the facilities for instruction in general and advanced work in soil management, soil fertility, fertilizers, and in soil classification and surveying. Samples of most of the North Carolina soil types as well as many samples from other states are available for study. The information on the classification, distribution, composition, crop adaptation, and fertilizer requirements of North Carolina soils which has been accumulated by the Experiment Station affords valuable material for student use. Facilities for field and laboratory work on the physical and chemical properties, classification, and fertility of North Carolina soils are unusually good.

Agricultural Engineering.—The laboratories for Agricultural Engineering are equipped with modern labor-saving tillage, planting, cultivating, and harvesting machines adapted to the types of farming practiced in the State. Various types of home water systems, electric lighting plants, farm gas engines, tractors, and farm building models are on display and are being used in laboratory instruction.

Animal Husbandry

The space devoted to Animal Husbandry is equipped to instruct students in the profitable types of farm animals, how to handle them so as to get the best returns, how to select breeding stock, and how to feed all classes of farm animals. The students in this department feed and prepare animals for the block, actually doing the slaughtering, and cutting the meat to be sold in a market which is conducted by the students.

The dairy barns contain more than seventy registered cattle representing four breeds. In many ways the herd of dairy cattle owned by this institution is one of the best to be found. A sufficient number of swine are kept to give the students practice in every phase of the industry. The same is true of horses, sheep, and beef cattle.

The dairy is especially well equipped with modern machinery to give instruction in the testing of milk and its products, creamery buttermaking, ice cream making, and in the handling of market milk. There is adequate refrigerating equipment for cold storage of meats as well as dairy products.

Architectural Engineering

For instruction in Architectural Engineering there are provided: a working library of books, measured drawings and plates for reference and research, and a large collection of lantern slides to supplement the

lectures on historical architecture. Freehand drawing and rendering are taught with the aid of casts and models provided for this purpose.

The department has taken over the entire top floor of the Electrical Engineering-Physics Building. This provides three commodious drafting rooms, a studio and freehand drawing rooms, a large and well fitted lecture and stereopticon room, and an adequately equipped photographic laboratory.

Botany

Well-lighted laboratories are available, equipped with tapering tables for microscopic work. The bacteriology rooms are supplied with the necessary autoclaves, ovens, and incubator space. The plant physiology laboratory has a greenhouse adjoining it, which is equipped with tables for experimentation in addition to the regular benches. An additional greenhouse is available for plant disease research. The necessary herbaria have been developed to adequately support the various botanical courses. A botanical library is open for student use.

Ceramic Engineering

The Ceramic Engineering laboratory was opened for use during the session of 1925-26, and is one of the few in which full-size clay-working equipment is used. The student will, therefore, have the advantage of doing his laboratory work under practical conditions. As research work on North Carolina raw materials will be carried on in the laboratory during the next few years, this will be an additional advantage to the student.

Plants are provided for the manufacture of structural clay products, for pottery, and for the making of glasses and enamels. The apparatus comprises a roll crusher, jaw crusher, dry and wet pan, pug mill, gyratory screen, brick and hollow tile machine, cutting table, dry press, blunger, filter press, and accessories. The kiln and dryer equipment includes a closet dryer, large gas-fired kiln, a gas-fired muffle kiln for pottery, load test furnace, thermal expansion furnace and two high temperature furnaces.

The testing laboratory is equipped with Ro-Tap screens, balances, briquette machine, microscope, volumeters, and electric oven.

Chemical Engineering

The laboratories of the department of Chemical Engineering occupy the ground floor of Winston Hall. The available space has been divided into an exhibit room; Water and Engineering Materials laboratory; Electrochemical Engineering laboratory; Fuel and Gas Technology room; Oil and Hydrogenation laboratory; Experimental Rayon plant; Destructive Distillation installation; dark room for metallographic and microphotographic study; the Graduate Research laboratory; and Unit Processes laboratory.

The Chemical Engineering laboratories have suitable equipment, much of it specially designed, for the study of the main processes and plant problems of the chemical engineering industries. They are supplied with

direct and alternating current, gas, water, steam, compressed air, electric motors, generators, and storage batteries. They are equipped with precision and control instruments, such as refractometer, surface tension apparatus, polariscope, potentiometer, microscope, colorimeter, calorimeters, tint-photometer, thermocouples, and optical pyrometer. They are equipped also with filter presses, centrifuges, crushers, grinders, and pulverizers, vacuum pan, stills, autoclave, jacketed kettle, gas, water, and electrical meters, equipment designed and built such as double effect evaporators, heat exchangers, flow of fluid experimental equipment for orifice, venturi, pitot, and weir gauges, and driers. Installations at the College are used to study such chemical engineering problems as humidifying, refrigeration, and combustion. An experimental refinery and hydrogenation plant for vegetable and other oils has been installed. A complete permutit water-softening equipment forms a unit of an experimental water purification and treatment system. In addition, the industrial plants of the city offer opportunity for study of plant operation and problems.

There has been recently added to the department of Chemical Engineering a valuable exhibit room, where products of many of the Chemical Engineering industries are exhibited. These exhibits are used for instructional purposes and serve to give the student very valuable training. These exhibits are arranged in the form of flow sheets showing the various steps in manufacturing processes.

Chemistry

The Department of Chemistry occupies Winston Hall. There are laboratories for Inorganic, Organic, Physical, Qualitative and Quanitative Analysis, and research. All these laboratories are supplied with the necessary apparatus, chemicals, and suction hoods, and all have convenient gas, water, and electric connection.

The Chemical Library is well supplied with reference books and chemical journals.

The Chemical Museum contains specimens of the more common minerals, ores, and chemicals, together with many industrial, chemical and allied products.

There is special equipment for research work by graduate students.

Civil Engineering

The Department of Civil Engineering is located in the new Civil Engineering Building. This building is newly furnished with facilities for taking care of the work; classrooms, laboratories, drawing rooms, and offices. The equipment includes surveying instruments, transits, levels, plane tables, current meters, sextants, planimeters, calculating machines, and blue-printing apparatus.

Construction Engineering

The equipment of the Department of Civil Engineering is available for instruction in Construction Engineering. In addition there is provided a

complete file of trade literature and publications, a collection of lantern slides to supplement lectures, and a series of drawings and blue-prints for investigation.

Electrical Engineering

Instruction in Electrical Engineering is given in the Electrical Engineering-Physics Building, which contains the offices, well-arranged recitation rooms, an excellent computing room, a large lecture room and a journal room.

The Machine Laboratory, sixty by eighty feet, is supplied with power from the college plant, and also through a direct connection with the lines of the Carolina Power and Light Company; two banks of transformers supply two and three phase power, at the standard voltage, to any point in the laboratories and lecture rooms. Direct current power is supplied through motor-generator sets and a rotary, with a combined rating of 150 kilowatts. About 300 Kv-a. in generators and motors and 150 Kv-a. in transformers are available for testing.

A gallery running around the laboratory provides rooms for research and other special investigations; two laboratories with a floor space of fifteen hundred feet are devoted to electric and magnetic measurements and standardization. An excellent equipment of meters and instruments facilitates the work in the laboratory. In addition there is a laboratory for photometric measurements; one for communications, one for oscillographic measurements, a small shop and a good storage battery equipment.

Engineering Experiment Station

The laboratory of the Engineering Experiment Station is located in the south end of the Civil Engineering Building. It is equipped with machines and apparatus for making many of the physical tests on materials, such as stone, brick, wood and steel. There are two Olsen Universal Testing Machines, one a hand-operated machine of 15,000-pound capacity, and a 150,000-pound electrically driven machine. There are also grinding and shaping machines, diamond core drill, a stone cutting saw, brick rattler, a Deval machine, and numerous smaller pieces of apparatus. The laboratory contains also an improved drum dynamometer, a tire tester, and a road test truck. All of the equipment in the laboratories of the several engineering departments is available for experiment and tests undertaken by the Engineering Experiment Station.

Forestry

Some of the field work of the Department of Forestry is now carried on at the Camp Polk prison farm near the State Fair Grounds, which has a thousand acres of timber land. The supervision of the timber is handled by class projects.

The Poole Woods, six miles east of Raleigh, is a virgin tract containing stands of short-leaf and loblolly pine. This is an area of seventy-five acres that has been acquired for a laboratory and as a last remnant of the virgin stand of timber in this locality.

The George Watts Hill Demonstration Forest, near Durham, is a tract of 1,400 acres which has been given to the College. It contains stands of short-leaf, loblolly pine, oaks, gum, tulip, dogwood, and all of these species in different associations. It is rolling country and serves admirably for the study of forest problems in the Piedmont section.

The MacLean Forest located in Hyde County in the eastern part of the State is in the typical Coastal Plain region. It contains 1,554 acres and is used for demonstration work in the east coast type.

A large tract of land has recently been acquired in Jones and Onslow counties in the southeastern part of the State, which consists of more than 83,000 acres and has the various types of timber found in this region. The large areas of virgin timber make a very complete laboratory for studying forest development and succession.

In all, the Forestry department has available about 87,000 acres on which to do field work, demonstration and research. These areas include the various types found in North Carolina with the exception of the mountain conditions.

The Arboretum area of seventy acres near Raleigh is being developed into an arboretum containing all of the tree species and associated shrubs that grow in this climatic condition. It contains swamp land and upland which adapts it for this use. More than one hundred tree species have been planted in this area.

The Wood Technology Laboratory contains a representative collection of the more common woods and will be gradually extended.

The Timber-Testing Laboratory, in connection with the Engineering Experiment Station, contains the machines for the various timber tests.

Greenhouse space is available for special problems in forest research.

Highway Engineering

The equipment at the College for instruction in Highway Engineering is fairly complete, and is constantly being added to and enlarged. The Materials Testing Laboratory in the new Civil Engineering Building is fully equipped for testing all materials used in road building; there is full field equipment for surveys, and modern drawing rooms provided with the necessary furniture and instruments. There is also a large lecture room fitted for the use of lantern slides and motion pictures.

Horticulture

The Department of Horticulture is well equipped in classrooms, laboratory, and field equipment to offer instruction in the several important and diverse fields of horticulture.

Pomology and Small Fruit Culture. The College orchards and vineyards, the laboratories, orchard equipment, a nursery plot, and other facilities are available to treat every phase of fruit-growing from the selection and propagation of varieties to the details of orchard management.

Olericulture and Floriculture. Two modern greenhouses are an important part of the equipment of the department, and are used primarily for experimental and instructional work in these two important and growing fields of horticulture. Potting rooms, propagation benches. and other more specialized equipment are used to offer both undergraduate and graduate instruction. Land and equipment to demonstrate and study details of commercial olericulture are convenient to the greenhouses.

A physiological laboratory, cytological laboratory, calculating machines, library, greenhouses and land are available to graduate and undergraduate students to carry on special studies. Experiment Station projects conducted by the Experiment Station Staff are also available for study and observation.

Landscape Architecture. General equipment and facilities for instruction are amply provided for in the combined resources of the department of Civil and Architectural Engineering, and Horticulture.

Special equipment and facilities provided by the department of Horticulture include nursery and tree-surgery tools, instruments and supplies; drafting rooms with necessary furniture; poles, pins and tapes for simple measurements and laying out work on the ground; planimeters and slide rule for use in making estimates; periodicals, illustrated folios, nearly six hundred lantern slides; and a first-class nucleus of a standard professional library on the subject.

In Plant Materials extensive collections on the College grounds and at various points in the city furnish an ample supply of all kinds of these materials for both study and use. In addition there are several collections within easy reach for occasional visits and study.

In Design and Construction the College grounds, private properties, and numerous public and semi-public areas and institutions in and about the city provide a wide range of subjects for study and practice. The City of Raleigh itself is a most interesting subject for study in connection with the course in City Problems, since it is one of the very few existing examples of a capital city which was planned in advance of its building.

Mechanical Engineering

The Department of Mechanical Engineering is located in Page Hall. This building is completely furnished and includes the offices for the members of the teaching staff and classrooms and drafting rooms.

The drafting rooms are equipped with tables, stools, cases for boards, reference files, and models. The senior drafting room has two Universal Drafting machines in addition to other necessary equipment. The blueprint room contains a blue-print machine and sheet washer in addition to sun frames.

The Shops Building contains the offices of the instructors in the shops and also contains completely equipped shops for instruction purposes.

The Wood Shop is equipped with a large variety of modern machines, such as: lathes, combination saw, dado saw, cut-off saw, jointer planes, mortisers, sanders, moulder, sticker, trimmer, shaper, boring machine,

band saw, jig saw, all kinds of clamps, a glue room with electrical glue heater, and other essentials that go to make an up-to-date shop. These machines are driven electrically with either individual or group motors. There are many work benches, and much auxiliary equipment.

The shops and the shop recitation room are well lighted, heated, and ventilated.

The Foundry Equipment consists of a 36" cupola, a 14" cupola, brass furnace, core oven, core machine, molding machines, cleaning mill, motor driven elevator, emery wheel and buffer, and the necessary tools and patterns for practical molding.

The Forge Shop is equipped with forty anvils and forges, the blast for the forges being produced by a large power blower and regulated by an individual control on each forge easily accessible to the operator. The shop is also equipped with a modern down-draft type exhaust system, thereby eliminating all overhead pipes which would interfere with the proper and efficient lighting of the shop. Other equipment consists of: a special gas furnace for the heat treatment of steel, an oxy-acetylene welding outfit, drill press, iron shears, vises, emery wheel and other necessary forging equipment.

The Mechanical Engineering Laboratory is equipped with instruments and apparatus for making coal and gas analyses, oil tests, and steam, gasoline and oil engine efficiency and economy tests. The steam engines installed include plain slide valve, automatic cut-off, and uni-flow engines. The latter operates a two stage air compressor. There is also a triple expansion marine engine and a turbo-fan set. The Power Plant is equipped and used for complete boiler, steam engine, and turbo-generator tests. The laboratory is also equipped with 50,000 and 15,000 pound materials testing machines.

The Metallographic Laboratory is well equipped for advanced work dealing with the structure and physical properties of metals and alloys. The equipment includes an electric heat-treating furnace with rheostat control, pyrometers of the optical and thermocouple types, complete apparatus for the polishing and etching of specimens, including a three-wheel polishing machine, and metallurgical microscopes fitted with a variety of lens combinations.

Physics

The Physics Department occupies the north end of the new Physics and Electrical Engineering Building. The design of laboratories and classrooms and the modern furniture make for high teaching efficiency. Laboratories and lecture tables are served by complete distributing systems for gas, water, and electricity, the latter connecting with the central power room and switchboards of the department and the power house. Six smaller rooms are provided for private research.

In apparatus the department is especially well equipped for laboratory work and for advanced research. A bequest of the late William Kearney Carr added much to the general collection of demonstration apparatus and facilities for research in X-rays and in Sound. Duplication of the

most modern types of laboratory apparatus has made it possible to have the whole of each class working on the same experiment simultaneously. A library of Physics periodicals has been kept for many years, affording ready reference for those in research.

Located on the top of the Physics-Electrical Engineering Building is the Astronomical Observatory. Under the dome is a 5-inch equatorially mounted refracting telescope. Beside it is the chart, instrument, and radio room, making a good equipment for the teaching of General Astronomy. Also the latest type of radio receiving apparatus is installed in this room for use in connection with research and the radio laboratory below.

Poultry Science

The College maintains a modern poultry plant with four major breeds of poultry as best adapted to North Carolina conditions. Facilities for practical experience and teaching have been stressed in the construction of this plant, students having opportunities to observe and carry out feeding and feed mixing, selection and mating of poultry, culling, incubating and brooding, fattening, caponizing, and various methods and practices of marketing. The plant contains 23 acres, has four commercial houses, 24 brooding and rearing houses, and a capacity of 1,800 birds.

In conjunction with the production plant a special disease plant is maintained in which investigational work is carried out on the poultry disease problems of North Carolina.

In Ricks Hall the department maintains a poultry disease research laboratory, a diagnostic laboratory, candling and grading room, sticking and picking laboratory, incubation room, disease museum, seminar room and educational laboratories.

Sanitary Engineering

The equipment of the Department of Civil Engineering, including the Materials Testing Laboratory, is available for instruction in Sanitary Engineering. Equipment is provided for routine chemical and bacteriological tests for the proper control of Water Purification and Sewage Disposal plants. The Raleigh Water Purification Plant and the gymnasium swimming pool filter plant are available for practical instruction and demonstration. Coöperation with the Bureau of Sanitary Engineering of the State Board of Health, which is located in Raleigh, offers an exceptional opportunity for the study of all phases of Sanitary Engineering.

Textiles

In equipping the Textile School with machinery the aim has been to secure, as near as possible, ideal mill conditions. The essential principles of cotton yarn and fabric manufacturing can be fully illustrated on any of the standard machines, but in order to have ideal mill conditions, machines from different makers are included in the equipment so that the students may have the opportunity of becoming familiar with all the standard makes of textile machinery.

Carding and Spinning. For the purpose of giving instruction in the manufacture of fine and coarse yarns, a full equipment of the necessary machinery is provided. This machinery is located on the top floor of the building, and consists of pickers, cards, drawing, speeder, spinning, spooling and twisting frames, also a complete equipment of combing machinery for the production of fine yarns.

Knitting. This department is equipped with a variety of circular knitting machines for making ladies' hose and mens' plain and fancy half hose. It is also equipped with loopers, bottle bobbin winder, Universal winder, balances, etc.

Weaving. This room contains a larger variety of looms than can be found in any mill. These have been carefully selected so that the students may obtain a knowledge of the different cotton, rayon, and silk looms made in the United States. The equipment contains looms to produce such fabrics as prints, sheeting, denims and twill fabrics, ginghams, fancy shirtings, plush and dress goods, as well as leno and jacquard fabrics.

On this floor, also, is located the jacquard card-cutting and lacing equipment, and in a separate room silk throwing equipment, consisting of silk and rayon winder, 5.B. spinner, warping and beaming machine.

The development of the weaving industry in North Carolina for the past few years has been along diversified lines, and many fancy cotton, rayon, and silk fabrics are now manufactured in this State. The weaving equipment in the school has been especially selected so that textile students may be trained in the technique of manufacturing high-grade fabrics.

Designing and Fabric Analysis. A full equipment of design boards for single and double cloths are provided in the classrooms. Dies for cutting samples and different makes of balances are provided for the analysis of fabrics.

Dyeing. The Dye Laboratory is provided with a full equipment of analytical balances and other apparatus necessary for experimental work. It is also well fitted up with appropriate work tables and apparatus for experimental dyeing, dye-testing, color-matching, and the testing of dyed samples by light, acids, and alkalies.

The Dye House is equipped with the proper dyeing machinery needed in the dyeing of larger quantities of material and the giving of instruction in boiling out, bleaching, and dyeing of raw stock, skeins, warps, and piece goods.

Research Laboratories. Two laboratories are provided with the necessary apparatus to test cotton and rayon yarns and fabrics for moisture content and tensile strength, and for the analysis of starches and oils, photomicrography and other research.

Zoology

The space devoted to Zoology is equipped to present the various subjects and to carry on research in its own and related fields. The Ento-

mology laboratory has a large insectary with necessary equipment. The Genetics laboratory is provided with the usual equipment, and has an especially large collection of breeding animals for research and instruction in this field. The beekeeping laboratory is well provided with apparatus to illustrate all phases of beekeeping. A small apiary is maintained on the College grounds. The technique and graduate laboratories are especially well equipped for the teaching of graduate work. The museum contains a synoptic collection illustrating most groups of animals.

COLLEGE PUBLICATIONS

State College Record, issued monthly, contains announcements of official activities of the College. One issue constitutes the institution's catalog which sums up the work for the current session and outlines that for the following college session.

The Extension Farm News, with a circulation of 3,500 among farmers, club members and agricultural experts, is issued monthly, and is the official organ of the School of Agriculture.

Bulletins of the Experiment Stations in Agriculture and Engineering and of other departments are issued from time to time, as projects are completed.

The North Carolina State Alumni News is the official organ of the General Alumni Association.

STUDENT ACTIVITIES

Students attend college to fit themselves for a technical business life. While here they are therefore expected to be businesslike in their habits, to be prompt in their attendance, and regular at classes, shops, drills, and all other duties. To prepare themselves for their daily work, students are expected to observe in their own rooms the regular morning and evening hours of study, and to be absent from the College only at the regular specified periods.

Students are expected to keep their rooms neat and sanitary; to refrain from disturbing one another by noise in the buildings or on the grounds—in short, to conduct themselves in their college home with the same courtesy, self-respect, and propriety as in their own homes.

Student Government

The first Constitution of Student Government was granted by the Board of Trustees in 1921. Student Government in State College, therefore, has already passed the experimental stage. Its service to the administration of the College, its effect on the student body, and its introduction of students to the great problem of government have made it an important factor in the life of the College.

The governing body is entirely under the jurisdiction of the Student Council. There are sixteen members on the Council and they are elected

as follows: Three members elected from each of the five schools, and one member elected from the freshman class at large at the beginning of the second term.

The Student Council has complete control of the legislative, judicial, and executive functions of the government it represents. It is the purpose of Student Government to handle all matters of student conduct, honor, and general student interest; and to promote, in campus life, self-control, personal responsibility, and loyalty to the College and student body.

Young Men's Christian Association

The Young Men's Christian Association is a fellowship whose primary purpose is to win boys and men to Jesus Christ, to associate them in Christian living, and to help them to discover and to accept the full meaning of Christian discipleship for their own lives and for society.

The program work of the Association is carried on by a junior-senior cabinet, a sophomore council and a freshman council. The governing board is composed of eleven directors and there is an employed staff of three. Since 1913 the Association has had a building on the campus, made possible by a large gift from Mr. John D. Rockefeller and smaller gifts from many other friends. This building is the religious and social center of the campus and, in addition, has recreational features.

Societies, Clubs, and Fraternities

Alpha Mu, a local sorority, was organized in 1932, in order to instill a spirit of coöperation and friendship among the women students at State College. The primary purpose of this organization is to encourage a happy, wholesome college life for the women of State College.

The International Relations Club was organized to create and further interest in domestic and foreign affairs and is open to members of the faculty and students who are in sympathy with its aims.

The Monogram Club of North Carolina State College was reorganized in April, 1930. The purpose of the club is to develop true sportsmanship in all athletics; to create a spirit of coöperation among athletes, students, coaches, faculty members and alumni; to create and maintain respect and pride for the Monogram, and to regulate the wearing of athletic Monograms and Numerals.

Phi Epsilon, an organization exclusively for young women, promotes friendship among the women on the campus, improves opportunities for their participation in campus activities and fosters the social and cultural association of its members. An adviser is ever ready to give counsel in individual or group problems.

The Pullen and Leazar Literary Societies afford excellent opportunities for practice in declamation debate, composition, and parliamentary law, as well as opportunities for social pleasure and recreation.

The Red Masquers is an organization for the purpose of play production on the campus. It is entirely a student-body effort toward dramatic work and has progressed to the production of three-act plays.

The Self-Help Club was organized in 1927 to make possible a more complete development of the personality of students working to help pay their college expenses. The club is open to every self-help student whose character, scholarship, and standard of work meet the requirements.

The Agricultural Club, composed of students in Agricultural Education and Forestry, meets regularly and sponsors the Agricultural Students Fair and the Annual Barn Warming.

The Forestry Club consists of students in Forestry, and meets regularly for the discussion of topics in this field. The club takes part in intramural sports and general college activities.

The State College Grange is a student branch of the National Grange. Its chief purpose is to train Grange leaders. Students in Agriculture and Education, and also adults eligible to membership in regular Granges, are eligible to membership.

The Horticultural Society was organized by the students to stimulate greater interest in and to foster a better understanding of the educational value, research, professional possibilities ,and ideals of horticulture.

The Aeronautic Society has as its purpose the promotion of the technical phases of aeronautics. The society admits to membership students enrolled in any department of engineering, who are interested in aeronautics.

The Beaux-Arts is composed of students in Architectural Engineering and Landscape Architecture. Its purpose is the discussion of problems met in the practice of the profession.

The American Ceramic Society has established a student branch in order to promote interest in Ceramic Engineering and to prepare students for membership in the parent society.

The Chemical Engineering Society is a student branch of the American Institute of Chemical Engineers. Seniors, juniors, and sophomores in Chemical Engineering are active members, and freshmen are associate members. Chemical Engineering subjects and problems are discussed. Members on graduation are eligible for junior membership in the A. I. Ch. E.

The Civil Engineering Society is the student chapter of the American Society of Civil Engineers. The students eligible to membership are seniors, juniors, and sophomores in Civil Engineering. Freshmen are eligible as associate members. After graduation members are eligible for junior membership in the national A. S. C. E. Bi-monthly meetings are held for discussions of Civil Engineering subjects.

The Construction Engineering Society is a student chapter of the Associated General Contractors of America. This chapter has the distinction of being the first one organized in this country, and it contributes materially to the professional advancement of the sophomores, juniors and seniors eligible for membership.

The Electrical Engineering Society is a student branch of the American Institute of Electrical Engineers. There is great interest in the discussion of papers, inspection trips, and addresses by visiting engineers.

The Industrial Engineering Society, a student branch of the Society of Industrial Engineers, established in 1934, meets regularly.

Keramos, the naticnal professional Ceramic Engineering fraternity, has established a chapter, to which juniors and seniors of good character and high scholarship are eligible. Membership is a mark of distinction in Ceramic Engineering.

The Mechanical Engineering Society is a student branch of the American Society of Mechanical Engineers. The society is composed of seniors and juniors in Mechanical Engineering. It meets twice a month for the discussion of engineering subjects.

The Engineers' Council is the student organization representing the entire Engineering School. The membership is composed of two seniors, a junior and one professor from each of the Engineering departments. The organization publishes quarterly a student technical magazine, and during the spriug term provides for the Engineers' Fair and Exposition.

Theta Tau, a national professional engineering fraternity, installed Rho Chapter at State College in 1924. The total membership in the chapter now exceeds two hundred. The purpose of the fraternity is to develop and maintain a high standard of professional interest and to unite the members in a strong bond of fraternal fellowship.

The Business Club, composed of students in Business Administration and Industrial Management, is organized to bring about a closer contact between students and faculty and to have discussions with representative men of business in an effort to develop the professional attitude.

Delta Sigma Pi is a professional business fraternity. Beta-Delta chapter was established at State College in 1929. Its principal objects are to foster the study of business, to encourage scholarship and the association of students for their mutual advancement by research and practice, to promote a closer affiliation with the commercial world and to further a higher standard of commercial ethics and culture.

The Tompkins Textile Society meets twice a month to hear addresses from leaders in the textile industry, discuss textile topics, or hear reports upon articles in textile journals.

Social Fraternities. Fifteen national Greek-letter fraternities and three local Greek-letter fraternities have chapters at State College. The majority of these fraternities occupy chapter houses near the college campus. The work of the fraternities is coördinated through a local Interfraternity Council.

Honor Societies

Alpha Zeta, National Honorary Agricultural Fraternity, established the North Carolina chapter at State College in 1904. It strives to encourage scholarship and develop leadership personality and character in agricultural students. Membership is limited to students having high

scholastic standing and who have given promise of developing into leaders in the field of agriculture.

Blue Key, National Honorary Leadership Fraternity, is a working organization of members of the junior and senior classes. It strives to promote a spirit of fraternalism among the students through studying, discussing, and furthering the best interests of State College.

Gamma Sigma Epsilon is an honorary chemical fraternity. Alpha Beta chapter of North Carolina was established at State College in 1921. Its purpose is to promote scholarship and develop leadership in the field of chemistry. At the bi-weekly meetings, the members discuss chemical topics of importance.

The Golden Chain. Senior Honor Society, was organized at State College in 1926. The purpose is to foster prevailing traditions and to promote new traditions. Citizenship is the determining factor. Such qualities of citizenship as better athletics, highest standards of scholarship and government, clever expression, and fidelity to duty are prerequisites to membership in this society.

Kappa Phi Kappa, a professional education fraternity, established the North Carolina Alpha-Sigma chapter in 1931. The purpose is to promote the cause of education by enlisting men of recognized character and ability to study and practice its principles.

Lambda Gamma Delta is the honorary agricultural judging fraternity. Its aims are to promote and stimulate interest in agricultural endeavor. Students making any one of the national intercollegiate judging teams—Livestock, Horticulture, Poultry, or Farm Crops—are eligible to membership.

The Order of 30 and 3 is an honorary organization founded at North Carolina State College in 1931, recognizing leadership ability, scholarship, interest in college welfare, and good character. Eleven of the outstanding sophomores are elected during the winter term of each year. The club fosters high ideals, better school spirit, and support of all activities for the promotion of the best in student life.

Phi Eta Sigma Fraternity, Freshman Honor Society, was installed at North Carolina State College in 1930. Members are chosen from the freshman class following their first term in college. The purpose of the society is to recognize and encourage high standards of scholarship at the beginning of students' college careers.

Phi Kappa Phi, a national honor society with forty-five chapters, has as its primary purpose the promotion of scholarship in all branches of learning. Having both faculty and student members the society seeks also to cultivate high ideals and cordial relations within its membership.

Phi Psi is a national professional Textile Fraternity. Its objects are to promote good fellowship among men of the Textile Schools, to encourage a high standard in textile work, and to assist, by all honorable means, the advancement of its members.

Pi Kappa Delta, national honorary public-speaking society, established the North Carolina Alpha chapter at State College in 1925. Its purpose

is to promote intercollegiate contests in debate and oratory, and to provide suitable recognition for students who represent the College in these activities.

The Pine Burr Society was founded at State College in 1922. Its purposes are to encourage high standards of scholarship, to develop leadership in all worth-while organizations on the campus, and to preserve the history of the College.

Scabbard and Blade, National Honorary Military Society, founded in 1905, has at present local units in 82 colleges and universities. Its purpose is to raise the standard of military training in the R.O.T.C. and promote good fellowship among cadet officers.

Sigma Pi Alpha, National Honorary Language Fraternity, Alpha chapter, was founded at State College in 1927. The object of this fraternity is to stimulate an interest in and to acquire a more intimate knowledge of the language, life, customs, and culture of Spanish-speaking and other countries of the world, and to bring about a better understanding of them. Student membership is limited to those who have an unusual interest in languages and who have a high scholastic average.

Sigma Tau Sigma promotes scholarship among students in the Textile School. Members are elected on the basis of their standing in scholarship.

Tau Beta Pi, the National Honorary Engineering Society, established the North Carolina Alpha chapter at State College in 1925. The purpose is to promote scholarship among engineering students. The requirements for admission are high, and election to Tau Beta Pi is considered a signal honor.

EVENTS

The Students' Agricultural Fair is an annual occasion when the students in Agriculture have the opportunity to display the work of the various departments in which they are interested. It is held in connection with the North Carolina State Fair.

The Engineers' Celebration, in the Spring Term presents a comprehensive Exposition of the activities, interests, and equipments of the departments of the School of Engineering, the Engineers' Parade with representative and original floats, and the Grand Brawl with its impressive induction of qualified seniors into the Order of the Knights of St. Patrick.

The Textile Institute and Style Show is an annual event which affords Textile students an opportunity to display the products of their school. The home economics departments of North Carolina colleges for women coöperate with the Textile School in staging the Style Show which is usually held about the middle of April.

FORENSICS

State College's record in intercollegiate forensics places it among the two or three leading schools in the United States. During the past five years State College speakers have won over forty major National, South-

ern, South Atlantic, N.C.I.F.A., and state championships in debating, oratory, extemporaneous speaking, after-dinner speaking, and impromptu speaking. The Direct Clash debate plan was originated at State College four years ago, and since that time our debate teams have traveled over 19,000 miles by special invitation to demonstrate this new and difficult form before conventions and audiences in all parts of the country. They have twice appeared on the program of the National Association of Teachers of Speech, once in Los Angeles and once in New York City.

But despite the school's brilliant record in intercollegiate competition, emphasis has been put on providing training for every student interested in public speaking. An average of thirty students each year take part in the various school and inter-school contests. Any student of reasonable intelligence and industry is assured of at least three intercollegiate debates each year and the chance to take part in as many more as his ability and rate of improvement will justify. In addition, some eighteen semester hours of classroom instruction in public speaking are offered in the curriculum.

MUSIC

The Band has gradually grown in size and quality until now it has become a first-class, well-balanced symphonic band of 70 pieces, with a comprehensive music library and a splendid equipment of instruments, to which additions are made from time to time.

The Concert Orchestra and the Glee Club are being developed according to the same high standards. Vocal Quartet and Chamber Music Ensemble work are also encouraged.

There is a demand for all the musical organizations of State College in other towns as well as for local civic affairs and on the campus.

Mu Beta Psi (National Musical Fraternity). The purpose of this fraternity is to promote a better fellowship among the musicians of the various musical organizations of a college and among the musicians of the various musical organizations of the different colleges; also to advance music to its proper place as an educational subject. Juniors having served two years in some musical unit are eligible to membership.

STUDENT PUBLICATIONS

The Student Publications Association, composed of eighteen members, supervises publications for students of the College. Each publication, the student body and faculty are represented. The publications offer a good medium for practice in journalism, in addition to serving the College community.

The Technician is published weekly throughout the college year by a staff of students elected by the student body.

The Agromeck is the College annual, published by a staff composed of seniors.

The Wataugan, literary-humorous organ of the student body, is issued six times each college year and contains contributions by student body members.

The N. C. State Agriculturist, after a lapse of several years, was revived in the fall of 1930 by the Agricultural Club and is published monthly during the college year as an agricultural magazine by students in the School of Agriculture.

The Southern Engineer is a quarterly publication established in 1933 by students in the Engineering School. The magazine furnishes an outlet for articles on engineering subjects prepared by advanced students in the Engineering School.

The Pi-ne-tum is an annual publication by forestry students in the School of Agriculture and Forestry. The publication contains summary articles on forestry activities in North Carolina and brief personal items relating to seniors in the forestry courses.

PHYSICAL EDUCATION AND ATHLETICS

For some years there has been developing a nation-wide movement for the promotion of health. The World War gave great stimulus to this movement by bringing to light the fact that approximately one-half of the Nation's youth were actually unfit for military service, and by revealing that this unfitness could have been largely prevented or remedied by proper physical education.

The growing interest in physical education, intensified by the lessons of war, has already found expression in significant accomplishments. Thirty-six states have passed laws requiring physical training in all of their public schools. Playgrounds and recreation centers are being established in every progressive town or city. Many employers are providing opportunities for recreation, and are taking steps to promote the health of their employees.

The demand for trained physical directors, play, recreation, and athletic directors is increasing every year. This demand has become increasingly insistent because of the new recognition of health problems, the educational and social value of athletics, the relationship of play to moral training, and the relationship of the use of leisure time to citizenship, industrial efficiency, and community building.

The demand for competent teachers, supervisors, and directors in schools and colleges far exceeds the supply. It is generally recognized by all educators that no man on the teaching staff has such a close personal touch with the student as the coach and physical director. The demand is for the coach or director to be a man of culture, a college-trained man in general education, in addition to having a special training for different phases of athletics and physical education.

State College recognizes the lessons of the late war, as far as the health and efficiency of her own student body are concerned. She recognizes the large field in which her graduates can be of service—in schools, communities, and factories—in the way of right and efficient living. Therefore, this department is established on a thoroughly competent and expert basis, with a sufficient staff to give this professional training in physical

education and athletics, to help meet the needs of the College, State, and Nation. Sufficient courses are offered in this department for students to minor in physical education.

The Physical Education Department is quartered in the Frank Thompson Gymnasium. This building is one of the largest and best equipped gymnasiums in the South. The College has two athletics fields. Riddick Field, the intercollegiate football field, has a seating capacity of 15,000. Southside Park, adjacent to the gymnasium, 400 x 400 feet, is used for baseball, freshman sports and intramurals. "Red Diamond" is also accessible for sports.

The Organization of the Department

The Department of Physical Education is in the School of Science and Business. Its activities consist (a) of conducting the courses in Physical Education offered in various curricula for which college credit is given, (b) intramural activities, (c) intercollegiate athletics.

All phases of intercollegiate athletics at the College are under the supervision of the Faculty Athletic Committee and under the direct administration of the Athletic Director. All phases of physical education and intramural activities are under the supervision of the Dean of the School of Science and Business and under the direct supervision of the Professor of Physical Education.

The courses in Physical Education comprise the physical training required of all students in the first two years, and the professional courses which are elective in some curricula.

Physical Training Courses are required of all freshmen and sophomores. These courses are so standardized that they are presented, instruction given, and examination given each individual student on the same systematized basis as all other courses in the College. The work to freshmen is presented on the "stunt" basis, thereby adding an interest and an enthusiasm of accomplishment. Freshmen are taught the coordination necessary to do "athletic stunts" in the fall, "gymnastic stunts" in the winter, "track efficiency" tests in the spring. The sophomores are taught the rules and technique of playing sports such as tennis, boxing, handball, volleyball, basketball, soccer and tag football, playground baseball and swimming. It is hoped that each student will become interested and an adept in one or more sports that can be used for his personal recreation and exercise.

Professional Courses. These courses are planned to coöperate with the School of Education to prepare their graduates to meet the demands made upon them in their chosen field of labor. Physical Education is one of the options offered by the School of Education, so that students desiring to major may do so. The present demand is for teachers of mathematics, science, and history, who are also qualified to teach physical education and coach.

RULES OF ELIGIBILITY

North Carolina State College is a member of the Southern Conference and subscribes to its rules of eligibility for intercollegiate athletic contests.

MILITARY TRAINING

Military Training at the North Carolina State College of Agriculture and Engineering is organized in a department called the Reserve Officers Training Corps (R. O. T. C.). This department is one of the major divisions of the College. Instruction in Military Science and Tactics is divided into two periods of two years each. The first two years for Freshmen and Sophomores embrace the basic courses, and the last two years for Juniors and Seniors, the advanced courses.

All physically acceptable freshmen and sophomores are required to take the basic courses, except those who are excused by the Dean of Administration of the College or the Professor of Military Science and Tactics, but those excused from taking the basic courses are required to take alternative courses, in the humanities or social sciences. The advanced courses for juniors and seniors are elective. A student, upon successful completion of the advanced courses in Military Training, may, if he so elects, receive a reserve commission and be assigned to a reserve unit, normally in his own locality.

While the R. O. T. C. is designed under the National Defense Act of Congress to qualify students for positions of leadership in time of national emergency, it also affords to the College a means for practical training in organization, leadership and discipline which will be of value to its graduated students in an industrial or professional career. The theoretical courses have an element of general educational value.

The Federal government not only furnishes officers of the regular army as instructors, but it also assists very materially by supplying without cost equipment and uniforms to all R. O. T. C. students, and by providing pay for those who volunteer to take the advanced courses for juniors and seniors. The amount paid by the Federal government to each R. O. T. C. student during the junior and senior years is approximately $200.00.

Although the government furnishes necessary military uniforms and equipment, the College finds it desirable to require each student to make a small deposit as a guarantee against the return of such government clothing and equipment as is issued him. The student must also provide himself with a pair of low tan shoes. For the sake of uniformity, these must be purchased at the College. Other incidental expenses cost each freshman about $1.25 annually.

North Carolina State College not only has one of the largest Reserve Officers Training Corps units in the Fourth Corps Area, comprising the eight states of North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi and Louisiana, but also has one of the best

R. O. T. C. units in the South. It is organized as an infantry regiment of three battalions, with an excellent regimental band of sixty student members.

The training is conducted so as to emphasize the fundamental importance of good character and to develop the elements of leadership. It seeks to improve the student's general health and appearance. Neatness of clothing is required and the value of correct posture is stressed. Students must be punctual and regular in attendance in classes, drills, and other military duties.

One of the important benefits to the student himself comes from the fact that military training fosters discipline. Men who are to command other men successfully should first learn to obey. Furthermore, the R. O. T. C. course of training furnishes important elements in a sound, practical education in the principles, duties, and responsibilities of American citizenship.

INFORMATION FOR APPLICANTS

Classification of Undergraduate Students

A *regular student* is one who desires to pursue one of the standard curricula offered by the institution.

A *special student* is one who is admitted to take certain subjects. An individual of mature age, already engaged in a trade, occupation, or profession, may, upon the recommendation of the Dean of the School in which he desires to register, be admitted as a special student without fully meeting the entrance requirements in order to further improve himself in his vocation. Special students are required to present a record of their previous education when applying for admission. Special students are not eligible for a degree, cannot represent the institution in intercollegiate contests, and cannot become members of fraternities. Work completed by special students does not give college credit and cannot be used toward a degree.

Requirements for Admission to Undergraduate Schools

(See Graduate School for Graduate Admission)

There are two bases for the admission of regular students:

1. Graduates from a standard high school (a high school which is accredited by the State Department of Public Instruction) are eligible for admission without an examination.

2. (a) Graduates of four-year non-standard high schools may be admitted by passing successfully the College entrance examination prepared by the Examination Committee of the North Carolina College Conference.

(b) In exceptional instances a person of mature age may be admitted by the Dean of the School on the basis of his ability to carry the regular work of a curriculum in that school. This ability shall be determined by examinations, which shall include a psychological test.

Each applicant for admission must be at least sixteen years of age,

and must have a certificate of good moral character from the school last attended. A regular student, although admitted to college, must meet the specific requirements of the school selected.

Any student deficient in specified units may, upon the recommendation of the Dean of the School he desires to enter, be admitted, but must make up his deficiencies before the beginning of his sophomore year.

Fifteen units of credit are required for admission to the four-year curricula. A unit is defined as a subject pursued in an accredited high school for five periods a week throughout the year, each period being at least forty minutes.

The specified subjects are as follows:

	Units of Credit
English:	
Grammar and Composition	1
Literature for Study	1
Literature for Reading	1
History:	
*American or equivalent	1
Mathematics:	
Algebra to Quadratics	1
Algebra, Quadratics through Progressions	.5
Plane Geometry	1
**Solid Geometry	.5
Science:	
Any one listed below	1

Besides these required subjects, an applicant must present from the specified subjects or the following elective list enough credits to total fifteen units.

Elective Subjects

(The figure in each subject represents the maximum number of credits which will be acceptable. Less than that number may be offered. The total acceptable units in each group include those offered in the specified subjects.)

Science Group:	
Biology	1
Botany	1
Chemistry	1
Commercial Geography	.5
General Science	1
Physics	1
Physiology and Hygiene	1
Physical Geography	1
Zoology	1

* A student lacking American History will be admitted without condition but must elect nine hours in American History or Government as part of his credits toward graduation.

** Required in the School of Engineering only. Students having entrance condition in Solid Geometry will be required to take a special course to remove it.

Language:	
English	4
French	2
German	2
Latin	4
Spanish	2
History and Social Science:	
American or equivalent	1
English	1
General	1
Medieval and Modern	1
Ancient	1
North Carolina	.5
Civics	1
Sociology	1
Economics	1
Mathematics:	
Algebra	2.5
Business Arithmetic	1
Plane Geometry	1
Solid Geometry	.5
Trigonometry	.5
Miscellaneous (Not over 4 credits):	
Agriculture	4
Bookkeeping	1
Stenography and Typewriting	1
Drawing	1
Mechanic Arts	2
Mill Practice	1
Any other High School subject	1

Explanation

1. In addition to the three specified units in English, a fourth elective unit may be allowed for a full year of advanced work in the subject, including the history of English or American literature.

2. In Science a unit of credit is allowed only when the course includes laboratory. A record of the laboratory work in Science should be kept in a suitable note-book, and certified by the teacher of the subject or the principal or superintendent of the school.

3. In Foreign Modern Languages one unit of credit is allowed for each year's work. The first year's work should cover the grammar and about 200 pages of translation.

4. In Latin one unit each is allowed for grammar and composition, Cæsar (Books I-IV), Virgil (Books I-IV of the Æneid), and Cicero (six orations).

5. Standard high school textbooks are recommended for all subjects.

Certificates

Certificates must be presented on official College Admission blanks furnished by the College Registrar. These must be signed by the proper officials of accredited high schools or other preparatory schools of approved standing. These certificates must be submitted to the Registrar for approval. It is of distinct advantage to the applicant to send in his certificate as early as possible after the work is completed, but no certificate should be submitted until all work done for college entrance is entered on the certificate blank.

Certificates mailed to the College should be directed to the Registrar's office.

Advanced Standing

Students who have attended colleges of approved standing will be allowed credit for work done upon the presentation of proper certificates to the dean of the school in which they expect to register. At least one years' work in residence is required for an undergraduate degree.

Vaccination

Each applicant for admission is required to be vaccinated against smallpox before he can be admitted unless he has been successfully vaccinated within two years preceding his registration. Since inoculation against typhoid fever has become a standard preventive measure, parents are requested to have their sons inoculated before coming to College. However, this is not compulsory. The College offers a treatment free to all students. Therefore, there is no valid reason why any student should contract this disease if he will avail himself of this preventive of a disease to which young men are sometimes peculiarly susceptible.

Health of Students

We strive to protect the health of our students in every possible way. Each student is given a thorough physical examination when he enters college. If defects are discovered which can be corrected by special exercise the student is placed in a "Corrective Class" under supervision of a special instructor in our Department of Physical Education.

In case of illness, the student is sent to our College Infirmary where a resident nurse is on duty at all times. Our College Physician visits the Infirmary regularly once each day, and more often when necessary. Your attention is called to the following regulations governing care of the sick:

"The hospital and medical fee provides hospital service, general medical treatment, and the services of a hospital nurse for students of the College who pay this fee.

"It does not provide for surgical operations, nor private nursing. Neither does it include the services of dentists and eye, ear, nose, and throat specialists, except as they are called in for consultation by the College Physician."

Parents will be notified immediately in case of accident or serious illness of their sons, and no surgical operations will be performed, except in cases of extreme emergency, without full consent of parents.

Student Assemblies

The College Auditorium is not large enough to accommodate a joint assembly of all classes. The freshman class will meet twice each week. Wednesday at twelve o'clock the entire freshman class will meet in an Assembly in Pullen Hall. Friday the freshmen meet by schools with the dean or chairman of a department or an adviser appointed by the dean of the school. Sophomores will meet in an Assembly in Pullen Hall on the second Friday in each month. Juniors and seniors will meet in an Assembly in Pullen Hall on the first Friday in each month. Attendance on these assemblies is required.

Grades and Credits

The minimum passing grade in any course is 60 per cent. The following system is used in reporting the grades of students: A, 90 to 100 per cent, inclusive; B, 80 to 89 per cent, inclusive; C, 70 to 79 per cent, inclusive; D, 60 to 69 per cent, inclusive; F, for all grades below 60 per cent. Where the grade F is reported to the Registrar the student must repeat the course in class before he shall receive credit for the course. A student may be given an incomplete grade (I) if some specific portion of his work remains unfinished at the end of the term, provided his standing in the course has been of grade C or higher.

An incomplete grade, which is not removed by the end of the first term in which the student is in residence after receiving it, automatically becomes a failure.

The following system will be used in assigning "quality points" for the graduation requirements: A, 3 points per term credit; B, 2 points per term credit; C, 1 point per term credit, and D, 0 point per term credit. Students who enter with advanced standing are allowed one point for each term credit accepted on transfer.

In order that a student may reënter for any term he must have passed the following percentage of his term credits during the preceding term: Freshman, 50 per cent; sophomore, 60 per cent; junior, 60 per cent, and senior, 60 per cent.

A student, who is not eligible to reënter regularly in any term under the foregoing scholarship rule, may be permitted to proceed on probation in the succeeding term upon due consideration by the Scholarship Committee, and vote of the Faculty Council.

Every student who fails more than three credit hours shall be required to drop one half the number of hours he fails, or as near that number of hours as may be mathematically possible. The reëntrance of a student after the lapse of a term following that in which his eligibility was forfeited shall be decided by the Director of Instruction of his school upon the basis of maximum scholastic advantage to the student. This rule also applies to students applying from other institutions.

Credit is allowed upon a course only when the course is entered on the student's roster filed with the Registrar and Director of Instruction of his school.

Before allowing students to enter the junior or senior years, they shall have net credit points equal to or greater than the term credits carried. (In case of repeated courses, the repeated grade only shall be considered.)

This means that before advancing to the junior or senior class, students must have made an average of at least a "C" grade.

The minimum number of hours required for graduation in each school will be found in the description of courses, and so forth, under each school.

Right to Withhold Diploma

When the College grants a degree it places its stamp of approval upon a student, both as to his scholastic achievement and as to his character. The College therefore reserves the right to withhold a diploma for other reasons than poor scholarship.

Absence From Class or Examination

When a student is accepted for admission to State College, it is understood that he comes here with the desire and expectation of attending all his College duties as they are assigned to him.

The College faculty expects a student to attend every class, and no "class cuts" are allowed.

For class absences a student will lose one credit point for each three absences, except when the student is absent while engaged in activities authorized by the College, or except upon the presentation of a doctor's certificate showing that he was not well enough to attend class.

When a student has been absent from class, he must give his reason to the Dean of Students within one week from the date of the absence; otherwise, the reason for the absence will not be accepted.

If a student is absent from class ten times during a term, twenty times during a year, or sixty times during four years, he is automatically placed on probation and his parents and instructors are notified.

Students absent from class without a satisfactory reason while "On Probation" are subject to suspension or dismissal upon recommendation of the Committee on Discipline and approval of the Faculty Council.

There shall be a double loss of points for all college work missed on the two days preceding and on the two days following the authorized College holidays.

If a student is absent from any final examination without an official excuse his grade will be reported as "failure."

EXPENSES

The total college expense of a student will vary according to the taste and requirements of the individual, but need not exceed $425.00 for students from within the State or $500.00 for those from outside the State. This amount includes the cost of board, tuition, lodging, heat and lights, fees and deposits, books, drawing instruments, laundry, and

certain necessary incidentals. It does not include an allowance for clothing, pocket money, and contingencies.

Freshmen in Engineering, Forestry, Landscape Architecture, Industrial Management, Textile, and Teachers of Industrial Arts, will be required to purchase drawing equipment which will cost from $15.00 to $25.00, depending upon the completeness of the set and the quality of the material.

Tuition and Fees

The College is organized and operated on the basis of a full scholastic year as a unit. All tuition charges, room rents and fees, therefore, are for the full scholastic year, and are due and payable in advance, but for the convenience of the student, and at his option, may be paid in two installments in September and January.

Tuition and fee charges are due and payable in full at registration, or may be divided in two equal installments, payable at registration in September and January. The charges for tuition and fees are as follows:

Undergraduate Tuition and Fees

Tuition and regular fees for students residing in North Carolina amount to $167.00 for the year; for other students, $247.00. If the student elects to pay one half in January, the amounts are as follows:

FOR SEPTEMBER REGISTRATION

	Students Residing in North Carolina	Other Students
Tuition	$ 40.00	$ 80.00
*College fees	32.00	32.00
**Student Activity fees	4.00	4.00
Athletic fee	8.00	8.00
Total September to January	$ 84.00	$ 124.00

FOR JANUARY REGISTRATION

Tuition	$ 40.00	$ 80.00
College fees	32.00	32.00
Student Activity fees	4.00	4.00
Athletic fee	7.00	7.00
Total	$ 83.00	$ 123.00

The above fees are for all regular undergraduate students, and for special students carrying twelve or more credit hours per term. Special students carrying less than twelve hours per term pay the same fees as graduate students.

* These fees include Registration, Hospital and Medical, Library and Lecture, Laboratory and Classroom and Physical Education. Students living out of college with their parents need not pay the hospital and medical fee amounting to $8.00. Women students do not pay the $6.00 Physical Education fee.

** These fees include student government, student publications and general student activities. Students in Agriculture and Agricultural Education pay $4.00 additional. Students in Engineering pay $1.00 additional.

Students entering after the date of registration will be required to pay an extra fee of $5.00.

A deposit of $10.00 is required of each student in the Reserve Officers Training Corps to indemnify the College against the loss of Military Equipment. All unused portion of this amount is returned to the student at the end of the year. Students in the Reserve Officers Training Corps will require approximately $6.00 for shoes and other supplies.

Graduate Tuition and Fees

Graduate students, and special students carrying less than twelve credit hours per term, will pay a matriculation fee of $5.00 (payable only once) and $3.00 per term per credit hour. This payment includes tuition and College fees, but does not include student activity and athletic fees which are optional with graduate and special students.

Room Rents

Reservation of rooms in the College dormitories should be made in advance. Assignment of rooms will be made on receipt of the first payment, provided such payment is made on or before August 15. Reservations will be held until then, after which time, rooms for which no payments have been received will be assigned to others.

Room rent, including heat, light, and janitor service, varies from $72.00 to $45.00 per student per year, depending on the size and location of the room.

After June first, prospective students can secure detailed information, including floor plans of the various dormitories by addressing the Superintendent of Dormitories, North Carolina State College, Raleigh, North Carolina.

Payments of rent are due on August 15th, and on registration days in January and March.

Total Room Rent	Payable August 15	Payable January	Payable March
$72.00	$24.00	$24.00	$24.00
67.50	22.50	22.50	22.50
63.00	21.00	21.00	21.00
58.50	19.50	19.50	19.50
54.00	18.00	18.00	18.00
45.00	15.00	15.00	15.00

Refunds

A student withdrawing from College within ten days from the date of entrance shall be refunded the amount paid, less the registration fee and a reasonable charge for board, lodging, and services while in College.

A student withdrawing from College later than ten days from the date of entrance shall receive no refund, except for board and military deposit. Refunds for board shall be under the usual regulations governing withdrawal from the dining hall.

A room reservation may be canceled at any time before September 1, and in case formal notice is given the Superintendent of Buildings in writing before that date the full amount paid will be refunded.

A student withdrawing from a dormitory room regularly assigned and occupied for a period of ten days shall be entitled to no refund.

What a Student Needs for His Room

The College rooms are supplied with necessary furniture. Each student, however, should bring with him his own blankets, bed linen, and towels.

Board

The College maintains, for the convenience of the student body, two dining halls operated on a cafeteria basis.

One of these provides monthly board at a minimum rate for students who desire regular board at the lowest cost. Charges for board in this dining hall are payable monthly in advance. The total cost for board for the college year will be approximately $150.00; or at the rate of $19.00 per month. This price is based on conservative estimates of the present trend of commodity prices. If the rate is found to be high, the students will be given the benefit of a reduction. If low, the rate must be increased. *Students are not permitted to check out of this dining hall except on the last day of the month.*

The other cafeteria is operated for students who do not desire regular board, or who desire a larger variety of food to select from. Students may pay cash for each meal or purchase a book of tickets at a 10 per cent discount from the cash price. The cost of regular board in this dining hall will vary with individual students.

Both dining halls are modernly equipped and thoroughly sanitary. They are operated as a non-profit service agency, and all food served is of the very best and is furnished at the lowest possible cost.

Self-Help

An employment bureau for students is maintained in the Y. M. C. A., and, while the College does not guarantee to furnish work, many are assisted in finding positions where they can earn enough to help them pay at least a part of their college expenses. The work supplied is of various kinds, the most common being manual labor of one sort or another, although there are at times requests for stenographic, clerical, and other skilled help. A large number of students earn their board, or room, or both, by working in boarding houses, the college boarding department, or private homes. In general, a student is expected to work three hours a day for his board, and five to ten hours a week for his room, the amount of time in the latter case being determined by the character and location of the room.

Students desiring employment while in college may secure full information by writing to the Self-Help Secretary.

Student Loan Fund

The Alumni Association established in the year 1900 a small loan fund to be loaned to needy students of talent and character. This has been augmented from various sources and now amounts to $19,000.00. This amount includes the Finley Loan Fund, mentioned below, of $1,000.00, the Masonic Loan Fund of $4,500.00, and the Frank M. Harper Loan Fund of $200.00. Contributions have been received also from C. C. Chamberlain, Chairman Committee Sixth Masonic District Loan Fund, and from the New Bern Masonic Theatre Loan Fund. Loans are made at 6 per cent, and good security is required. As the loan fund is small and is kept loaned out, new loans can be made only as old ones are paid. The fund at present is restricted to students in the senior and junior classes.

Finley Loan Fund. As a memorial foundation to William Wilson Finley, President of the Southern Railway Company at the time of his death, that company has established a Finley Loan Fund for needy students of agriculture. The fund amounts to $1,000.00. This is loaned to students who are making their way through college, and returned by them to the fund after they have finished college and gone to work. It is administered by the Treasurer of the College, and all beneficiaries are named by the College.

Scholarships and Fellowships

The 1933 session of the General Assembly abolished all state scholarships and other forms of free tuition. Part of the law reads as follows:

"It being the purpose of this act that all students in State institutions of higher learning shall be required to pay tuition, and that free tuition be and the same is hereby abolished, except such students as are physically disabled, and are so certified to be by the Vocational Rehabilitation Division of the State Board for Vocational Education, who shall be entitled to free tuition in any of the institutions named in this act."

The John Gray Blount Scholarships are endowed by Colonel W. B. Rodman, of Norfolk, Va., in memory of his great-grandfather. The maximum value of each of these two scholarships is $200.00.

The W. O. Mitscherling Fellowship Fund. This fund is provided annually by Dr. W. O. Mitscherling, of Burlington, N. C., for the benefit of the Chemical Engineering Department, and is to be used in assisting graduate students and for the encouragement of research work.

The Champion Fibre Company Fellowship in Chemical Engineering provides a fund for use in encouraging graduate and research work in Chemical Engineering.

The Morrison Scholarship. This scholarship is given by Mrs. Cameron Morrison, of Charlotte, N. C., to the North Carolina boy or girl who excels in Jersey 4-H Calf Club work and who desires to take a four-year course in Agriculture at State College, majoring in Dairy Husbandry. This scholarship, available first in the fall of 1934, has a value of $320.00, which will pay the tuition for four years.

The Barrett Scholarships. These scholarships are given by the Agricultural Development Bureau of the Barrett Company to the North Carolina club members who excel in 4-H Corn Club work. These scholarships will be available in the fall of 1936 and consist of one four-year scholarship, valued at $320.00, and three one-year scholarships, valued at $80.00 each.

The Chilean Nitrate Leadership Award. In order to promote interest in a continuous program of achievements in all phases of 4-H Club work, the Chilean Nitrate Educational Bureau, Incorporated, offers a four-year scholarship in Agriculture, valued at $320.00, to North Carolina State College to the club boy selected as the outstanding club member in the State during 1936.

One hundred scholarships to the State 4-H Summer Short Course, held at State College, are offered to the club boys selected as the most outstanding club members in the State. One scholarship will be awarded to each county in the State. These scholarships have a value of $5.00 each.

The Holladay Scholarship. Mr. Randolph Holladay has established a four-year scholarship in honor of his father, Colonel Alexander Q. Holladay, first President of the North Carolina State College. This scholarship will pay $432.00 per year for a period of four years. The scholarship will be open in September, 1936, to any North Carolina boy who wishes to pursue a regular four-year curriculum leading to a degree. A special committee will be appointed to make the selection in this case.

National Cottonseed Products Association Scholarship. In order to promote interest in baby beef work and to stimulate the value of feeding a balanced ration, the North Carolina Division of the National Cottonseed Products Association offers a one-year scholarship in dairying or animal husbandry at the North Carolina State College of Agriculture to the North Carolina 4-H Club member growing and exhibiting the best baby beef calf during 1936.

MEDALS AND PRIZES

The Alpha Zeta Cup is awarded annually on Scholarship Day to the sophomore in Agriculture who made the highest scholastic average during his freshman year.

Alumni Athletic Trophy. The General Alumni Association presents annually a handsome trophy to the student athlete doing the most outstanding work during the college year.

The American Institute of Chemical Engineers Award is presented annually to the Chemical Engineering sophomore who has made the highest scholastic record during his freshman year.

The Associated General Contractors Prize is awarded each year by Carolina's Branch of the Associated General Contractors of America to that member of the senior class in Construction Engineering who has

the best scholarship record for the sophomore, junior, and senior years. The prize consists of a year's special training in construction in the field with pay.

Delta Sigma Pi Scholarship Key. To encourage high scholarship Delta Sigma Pi presents annually at every university and college where it has a chapter the Delta Sigma Pi Scholarship Key, which is awarded by the faculty to that senior who upon graduation ranks highest in scholarship for the entire course in Business.

The Elder P. D. Gold Citizenship Medal has been established by Mr. C. W. Gold, of Greensboro, N. C., member of the class of 1896, in memory of his father, Elder P. D. Gold, of Wilson, N. C.

This medal is awarded to that member of the senior class who has most distinguished himself in Student Citizenship during his sophomore, junior, and senior years.

The award is based on four qualities of citizenship in the college community—Scholarship, Student Leadership, Athletics, and Public Speaking. These four qualifications are certified to by the College Registrar, the Student Council, the Faculty Athletic Committee, and a committee composed of the ranking junior officer in all college societies in which public speaking is practiced.

The Moland-Drysdale Scholarship Cup is awarded to the freshman in the Department of Ceramic Engineering who has the highest scholastic average for the two terms preceding the annual Scholarship Day. In making the award, considerable weight is also given to interest shown in the activities of the department. The cup was presented to the Department of Ceramic Engineering by George N. Moland, of Hendersonville, N. C., president of the Moland-Drysdale Corporation of that city.

National Association of Cotton Manufacturers Students Medal is awarded annually to the Textile student who has the highest proficiency in his work.

Phi Kappa Phi Medals are awarded each year at the Scholarship Day exercises. A gold medal is awarded to the senior who as a junior made the highest grades. A silver medal is awarded to the junior who as a sophomore made the highest grades. A bronze medal is awarded to the sophomore who as a freshman made the highest grades.

The Sigma Tau Sigma Cup is awarded annually on Scholarship Day to the senior in Textile who has the highest scholastic average.

The J. C. Steele Scholarship Cup is awarded annually to the student of the three upper classes in the Department of Ceramic Engineering who has the highest scholastic average for the three terms preceding the annual Scholarship Day. In making the award the head of the department also takes into consideration the personality of the candidates and the interest shown in the departmental activities during the previous year.

The cup was presented to the Department of Ceramic Engineering by J. C. Steele and Sons of Statesville, to commemorate the establishment in

that city of the first plant for the manufacture of ceramic machinery in the South by J. C. Steele.

The School of Science and Business Scholarship Plaque is accorded each year on Scholarship Day to that student who has made the most progress in scholarship during the previous year. The award is unique in that it is for *improvement* in scholarship, the usual method being to award for highest scholarship.

The Textile Colorist Medal is awarded annually to the senior who presents the best thesis on some phase of Textile Chemistry and Dyeing.

THE D. H. HILL LIBRARY

The College realizes that experience in the use of books and periodicals is an essential part of the training of the agriculturist, engineer, industrialist, and scientist. In various courses the student is constantly being referred to books which he is either recommended or required to read. The book collection is being chosen with special reference to the courses offered by the College and to the development of general reading along desirable channels.

The library consists of all books and periodicals belonging to the College. It contains over 40,000 bound volumes, exclusive of government documents, and much unbound material. The library is a depository for the publications of the United States Government and also receives most of the experiment station publications of the different states. In addition there is a collection of foreign agricultural documents.

Two reading rooms with a seating capacity of more than 200 are maintained in connection with the library. There is a large general reference room, one division of which contains encyclopedias, dictionaries, atlases, and general reference books. The other division contains current magazines and state and national newspapers. There is a smaller room which is used for general reading purposes. It is equipped with comfortable furniture and has in it a collection of the best fiction and readable nonfiction. As the purpose of this collection is to promote reading for pleasure, studying is not permitted in the room.

Elementary instruction in the use of the library is given new students during the fall quarter. This includes lectures and problems in the use of the catalog, magazine indexes and reference books.

Hours. The library is open every weekday from 8:00 a. m. to 10:00 p. m., excepting in vacation, when it opens at 9:00 a. m. and closes at 5:00 p. m. On Sundays the hours are from 2:00 p. m. to 10:00 p. m., during the academic year and summer school. The library is closed on Sundays during vacation periods, New Year's Day, Fourth of July, Labor Day, and Christmas Day.

Rules. The rules of the library are designed to facilitate study and promote the use of books. Faculty members may keep books until May 15 of each year with the following exceptions. Fiction, "Open Shelf Collection" books, and bound periodicals are issued for two weeks only unless they are needed for course work. However, faculty members are

urged to return all books as soon as their need for them is filled. Books needed for reserve which are charged to faculty members will be recalled when needed. The term Faculty applies to persons of or above the rank of Instructor.

Students and other members of the College community may borrow books for a period of two weeks with the privilege of renewal in most cases.

Books and periodicals which the library does not own can usually be obtained from other libraries through the interlibrary loan system. This service is available to graduate students and faculty members.

Books bought at the recommendation of a department do not consequently become the exclusive property of that department. They are the property of the College, acquired through the library, and are to be so placed as to insure their greatest use to the greatest number of students and faculty members.

In addition to the D. H. Hill Library, the City of Raleigh has many excellent library facilities available to State College students. The North Carolina State Library, the Supreme Court Library, the North Carolina Library Commission and the Olivia Raney Library contain over 150,000 volumes.

THE SCHOOL OF AGRICULTURE AND FORESTRY

Ira Obed Schaub, *Dean and Director of Extension*
Zeno Payne Metcalf, *Director of Instruction*
Rhett Youman Winters, *Director of the Agricultural Experiment Station*

ORGANIZATION

North Carolina is one of the foremost states in the Union in the value of farm crops. The scientific investigations, demonstrations, and instruction of State College, in coöperation with the State Department of Agriculture, have been particularly effective in promoting better methods of farming, and in adopting scientific agriculture. The majority of the people of the State employed in gainful occupations are devoting their energies to some form of agriculture, and the greater part of our wealth and prosperity is derived from this great vocation.

The art of cultivating the soil properly and living well at home, the value of selecting that form of agriculture which is in greatest demand, and the best method of turning the surplus products into commercial channels that will be most profitable to the producer are matters of the greatest concern to the people of the State. The School of Agriculture has been reorganized for the purpose of rendering a much larger service to the State along these and other lines. The Experiment Station and the Extension Service have been more closely united with college instruction, and the courses of study have been so organized and the instruction so broadened as to offer much larger opportunities to young men entering college, and to farmers and other agricultural workers throughout the State.

Beginning a generation ago on a very small scale, the School of Agriculture has grown until today it embraces the following important divisions: (a) Agricultural Economics, including Farm Marketing and Farm Management; (b) Agronomy, including Field Crops, Soils, Plant Breeding, and Agricultural Engineering; (c) Animal Industry, including Animal Production, Animal Nutrition, Dairy Production, and Dairy Manufacturing; (d) Botany, including Bacteriology, Plant Physiology and Plant Diseases; (e) Horticulture, including Pomology, Small Fruit Culture, Floriculture, Truck Farming, and Landscape Architecture; (f) Forestry; (g) Poultry Science, including Poultry Diseases, Poultry Breeding, Poultry Feeding, and Poultry Management; (h) Zoology, including Genetics, Entomology, and Animal Physiology.

THE PURPOSE OF THE SCHOOL

The purpose of the School of Agriculture is three-fold: (1) To secure through scientific research, experimentation, and demonstration accurate and reliable information relating to soils, plants, and animals, and to secure from every available source reliable statistical, technical, and scientific data relating to every phase of agriculture that might be of advantage to our State; (2) to provide instruction in college for young men who desire to enter the field of general agriculture, or wish to become professionals in agricultural education or specialists in any field

of science related to agriculture, and (3) to disseminate reliable information through publications and through extension agents, and through a wise use of this information to give instruction to the agricultural workers of the State in the scientific, experimental, and practical progress in the various lines of agriculture.

All effective instruction in agriculture is based on research and investigation, and the curricula are organized so that not only the subject-matter for classroom instruction and extension work may be drawn from research, experimentation, and demonstration, but that the students themselves shall have the opportunity to work under the direction of research specialists.

The vocations open to well trained young men in the field of agriculture and the opportunities afforded for distinct service to the State are greater than ever before in our history. In order that the larger vocations in agriculture may be presented to the youth of our State, the courses of study are so organized as to give specific training for the following major vocations:

General Farming.
Agricultural Extension Agents.
Agricultural Specialists in State or Federal Departments.
Stock Raising and Dairying.
Specialists in the Manufacture of Dairy Products.
Foresters.
Fruit Growers.
Truck Farming.
Poultrymen.
Agricultural Specialists in Foreign Lands.

In addition to these major vocations, the School of Agriculture gives instruction in Beekeeping, Floriculture and the basic instruction for teachers of Agriculture.

ADMISSION

Each applicant for admission must present evidence that he has satisfactorily completed a four-year curriculum of not less than fifteen units in a secondary school which is approved by the State Department of Education.

Each applicant for admission must be at least sixteen years old, and must submit fifteen units of credit from an accredited high school. Of these units 8.5 are in specified subjects and 6.5 in elective subjects.

ADVANCED STANDING

Students who have attended other colleges will be allowed credit for work done upon the presentation of proper certificates to the Director of Instruction.

AGRICULTURAL CURRICULA FOR UNIVERSITY AND COLLEGE GRADUATES

Selected courses leading to the degree "Bachelor of Science" in Agriculture are offered to graduates of universities and standard colleges. These are arranged in accordance with the vocational aim of the individual student, and in the light of credits presented from the institution from which the student has been graduated, subject to the approval of his adviser and the Director of Instruction. In cases where the student presents enough credits which may be used for courses required in his curriculum he may be graduated with a B.S. degree in one year. In no case should it take more than two years to complete the work for his B.S. degree.

REQUIREMENTS FOR GRADUATION

The requirement for graduation is the satisfactory completion of one of the curricula outlined below.

A minimum of two hundred and thirty (230) term credits and two hundred and thirty (230) points is required for graduation from the School of Agriculture. The term credits should be distributed as follows: A maximum of sixty (60) term credits in major department, and a minimum of eighteen (18) term credits in Language, twenty-four (24) term credits in Science, eighteen (18) term credits in Social Science, twelve (12) term credits in Military Science or alternative, and six (6) term credits in Physical Education.

Students entering with advanced standing are required, during the remainder of their course, to earn at least as many points as the number of term credits remaining necessary for graduation.

DEGREES

The degrees of Bachelor of Science in Agriculture and Bachelor of Science in Forestry are conferred upon the satisfactory completion of one of the curricula in Agriculture.

The degree of Master of Science in Agriculture is offered for the satisfactory completion of one year of graduate study in residence. Candidates for this degree are enrolled as students in the Graduate School.

The professional degree of Master of Agriculture may be conferred upon graduates after five years of service in Agriculture, and upon the acceptance of a satisfactory thesis.

CURRICULA IN AGRICULTURE

The curricula in Agriculture offer a combination of practical and theoretical work. About half of the time is devoted to lectures and recitations, and the other half to work in shops, laboratories, greenhouses, dairy, poultry yards, and on the College farm.

In order that every graduate of the School of Agriculture shall acquire a liberal education in lieu of specializing too intensely, and shall become a leader having breadth of vision, the curricula in Agriculture contain broadening subjects such as language, literature, history, and social sciences.

GENERAL AGRICULTURE

The basic freshman and sophomore years are outlined below. This curriculum is intended to train students in board basic fields of agriculture. The curriculum of each student is to be arranged in accordance with his vocational aims subject to the approval of his adviser and the Director of Instruction. Students specializing in this curriculum will find vocational opportunities as:

Agricultural Specialists in State or Federal Departments, and Agricultural Colleges.

The School of Agriculture is equipped to train men in the fields of:

1. Agricultural Economics and Farm Marketing.
2. Agricultural Engineering.
3. Animal Production.
4. Dairying.
5. Entomology.
6. Field Crops and Plant Breeding.
7. Olericulture and Floriculture.
8. Plant Pathology.
9. Pomology.
10. Poultry Science.
11. Rural Sociology.
12. Soils and Fertilizers.
13. Landscape Construction and Gardening.

Agricultural Inspectors.

Most states now maintain inspection of fertilizers, seeds, nurseries, and insecticides. Most cities have special inspectors for city milk supplies. Students seeking vocational opportunities in these fields may elect appropriate subjects in their junior and senior years.

Agricultural Extension Specialists.

Students in this group will find employment as agricultural agents for railroads and commercial firms dealing in agricultural products and as extension specialists in the various fields of agriculture in the Extension Departments of agricultural colleges and as county agricultural agents.

County Agent.

The growing importance of marketing of agricultural products and the need for better organization of farms has given rise to a strong demand for county agents who have had special training in Agricultural Economics.

Agricultural Specialists and Commercial Agricultural Agents.

The School of Agriculture is well equipped to train men for agricultural industries such as manufacturing of fertilizers, livestock and poultry feeds and farm machinery, and for the manufacturing of dairy and horticultural products.

These concerns are usually anxious to obtain men who have had actual agricultural experience, and who, in addition, have had special training in agricultural economics, accounting, and statistics. This field is developing rapidly and offers a fine opportunity for students who wish to enter the purely commercial field.

Agricultural Specialists in Foreign Lands.

The School of Agriculture is well equipped to train men as experts in cotton and tobacco production in foreign lands.

Junior Agricultural Economist.

A position as a Junior Agricultural Economist involves research in Agricultural Economics. Such positions are usually available in the governmental departments such as United States Department of Agriculture and in various State institutions.

Farm Manager.

There is a growing demand for men who have had practical farm experience and who have special training in farm organization and management. This field is practically a new one, and there have been many requests for men with special training in farm management.

Marketing Specialists.

There is a growing demand for men who can manage coöperative marketing and other farmers' business associations.

CURRICULUM IN AGRICULTURE

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
General Inorganic Chemistry, Chem. 101, 103, and 105	4	4	4
General Botany, Bot. 102	0	4	0
General Zoology, Zool. 101	4	0	0
Physical Geology, Geol. 120	0	0	4
Economic History, Hist. 101	3	3	3
Mathematical Analysis, Math. 100 a-b-c	3	3	3
Military Science I, Mil. 101, or alternate	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	20	20	20

Sophomore Year

Farm Equipment, Agr. Eng. 130	3	0	0
Soils, Soils 115	0	0	4
General Economics, Econ. 103	3	3	0
Agricultural Economics, Agr. Econ. 260	0	0	3
Physics for Agricultural Students, Phys. 105	5	0	0
Animal Physiology, Zool. 201, or Plant Physiology, Bot. 209	0	0	5
Economic Zoology, Zool. 102	0	4	0
General Botany, Bot. 101	4	0	0
Introduction to Organic Chemistry, Chem. 241	0	4	0
Animal Nutrition I, A.H. 101	0	3	0
General Poultry, Poul. 101	0	3	0
Principles of Forestry, For. 104	3	0	0
General Horticulture, Hort. 101	0	0	3
General Field Crops, F.C. 101	0	0	3
Military Science II, Mil. 102, or alternate	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	20	21

Junior Year

Agricultural Major	6	6	6
English	3	3	3
Electives	9	9	9
	18	18	18

Senior Year

Agricultural Major	6	6	6
Science	3	3	3
Electives	9	9	9
	18	18	18

AGRICULTURAL ENGINEERING

The curriculum in Agricultural Engineering is in the process of revision. The basis of freshman and sophomore years are outlined below. This curriculum has been arranged to give its graduates sound and fundamental training in engineering, basic training in the agricultural sciences, and a specialized study in courses involving the application of engineering knowledge to agricultural problems.

Due to the great variety of work required of agricultural engineers, a number of subjects peculiar to other curricula are included, so that the student receives a considerable breadth of training. Engineering principles applied to agriculture have played an important part in the advancement and development of agricultural practices. Agricultural engineering as a profession, however, is of only comparatively recent development, but it is rapidly becoming recognized as one of the more important of the engineering professions, since it is identified with the most important of industries—agriculture. This course is especially suited to the boy brought up on the farm, as it prepares him for a professional business, or farming career, and enables him to capitalize on his farm training.

Subdivided on the basis of engineering technique, Agricultural Engineering embraces three general fields: (1) Power and Machinery, including Rural Electrification; (2) Farm Structures, including Sanitation, Materials of Construction and Equipment, and (3) Land Reclamation, which includes Irrigation, Drainage, Soil Erosion Control, and other forms of mechanical improvement of agricultural lands.

Occupations open to graduates are, briefly: teaching, experiment station and extension service positions with colleges and the government; engineers in land reclamation, drainage, or irrigation enterprises; designing, advertising, sales and production work with manufacturers of farm machinery, equipment, and building materials; rural electrification work; editorial work with publishers; appraisal and agricultural engineering consultant service.

CURRICULUM IN AGRICULTURAL ENGINEERING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Trigonometry, and Analytical Geometry, Math. 101-2-3	6	6	6
Composition, Eng. 101	3	3	3
General Inorganic Chemistry, Chem. 101-3-5	4	4	4
Engineering Drawing, II, M.E. 102	3	3	0
Descriptive Geometry, M.E. 103	0	0	3
Military Science I, Mil. 101, or alternate	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	19	19	19

Summer requirement:—Surveying, C.E. 102.

Sophomore Year

Differential Calculus, and Integral Calculus I, II, Math. 201-2-3	4	4	4
Business English, Technical Writing, *Public Speaking Eng. 120, 324, 160, or **Spanish, M.L. 103	3	3	3
Physics for Engineers, Phys. 104	4	4	4
Farm Equipment, Agr. Eng. 130	3	0	0
Farm Engines, Agr. Eng. 155	0	3	0
Soils, Soils 115	0	0	4
Economic History, Hist. 101	3	3	3
Military Science II, Mil. 102, or alternate	2	2	2
Sport Activities, P.E. 102	1	1	1
	20	20	21

Junior Year

Agricultural Engineering Majors	6	6	6
Agricultural Subjects	3	3	3
Science	3	3	3
Electives	6	6	6
	18	18	18

Senior Year

Agricultural Engineering Majors	6	6	6
Agricultural Subjects	3	3	3
Rural Sociology, Rural Soc. 302	0	3	0
Engineering Geology, Geol. 201	3	0	0
Electives	6	6	9
	18	18	18

* Either Principles of Journalism, Eng. 150 or some term of a course in American or English Literature may be elected in place of Public Speaking.

** With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the course in English.

FORESTRY

The aims of the curriculum in Forestry are: (1) to train young men for work in the technical and applied fields of forestry on public or private forest land; (2) to give special training in fields of research; (3) to advance the knowledge of the entire profession.

The profession of forestry is comparatively young in North Carolina. It began some thirty years ago and has made remarkable progress during its first quarter century of existence. The next decade promises more advancement and achievement than all of the past because the foundation has been laid and the building of the superstructure will depend upon the expertness of the builders. In the ranks of the builders are included the United States Forest Service; State Forest Departments in a large number of states; corporations and lumber companies; individual land-owners, and last, but by no means least, the farm woodlands.

Students completing the forestry course may look to the following fields of employment: United States Forest Service, the State Service, including not only North Carolina, but especially the Southern States and any other state organizations, the lumber companies, timber-holding companies, corporations and individuals. The forestry program in the State of North Carolina is very materially strengthened by the presence of the national forests and the Appalachian forest experiment station. These will be of direct aid in the study of forest research problems, management problems and the organization and work of the National Forest Service.

Forest management aims to make a forest properly a permanent producing unit. All forestry is now being built on this basis.

The field of forest utilization requires special courses dealing with the utilization of the products of the forest. During the third term of the senior year field studies of woodworking industries, logging operations, paper and pulp mills and problems in forest management take up most of the time.

The field of silviculture deals with the problems of producing a forest, such as selection of species, methods of reproduction, cutting systems, etc. The work is becoming increasingly important as our virgin timber supply is depleted.

Research in forestry problems is being recognized by all agencies in the fields of Forestry. Men trained in research methods are needed in the government experiment stations, state experiment stations and private laboratories.

Two hundred and thirty-eight (238) credits and two hundred and thirty-eight (238) points are required for graduation in Forestry.

A field trip through the southeast and Gulf states is required for the senior class to study applied forestry under field and factory conditions. Local field trips are also required of other classes. A nominal fee is charged to cover the expense of these trips.

CURRICULUM IN FORESTRY

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Drawing, C.E. 100	1	1	1
Botany, General and Systematic Bot. 101, 102, 204	4	4	3
Mathematical Analysis, Math. 100 a-b-c	3	3	3
Composition, Eng. 101	3	3	3
Zoology, Zool. 101, 102	4	4	0
Economic Entomology, Zool. 204	0	0	4
Elementary Forestry, For. 101	1	1	1
Introductory Sociology, Soc. 102	0	0	3
Military Science, I Mil. 101, or Human Relations, Soc. 101	2	2	2
Fundamental Activities and Hygiene P.E. 101	1	1	1
	19	19	21

Sophomore Year

Introduction to Economics, Econ. 102	0	3	0
Agricultural Economics, Agr. Econ. 260	0	0	3
Plant Physiology, Bot. 209	0	0	5
Dendrology, Bot. 207	3	0	3
General Inorganic Chemistry, Chem. 101, 103, and 105	4	4	4
Wood Technology, For. 102	0	3	0
Physical Geology, Geol. 120	4	0	0
Timber Physics, For. 103	0	0	3
Surveying, Theoretical C.E. 206	3	3	0
Field Surveying, C.E. 207	1	0	0
Topographical Drawing, C.E. 208 a	0	1	0
Introduction to Psychology, Psychol. 101	3	0	0
Military Science II Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	17	21
Summer Camp 1936			
Surveying and Mapping, C.E. s101			3
Dendrology, For. s211			3
			6

Junior Year

Soils, Soils 115	0	0	4
Mensuration I, II, For. 201, 202	3	3	0
Silviculture I, II, For. 204, 205	3	3	0
English	3	3	3
Forest Entomology, Zool. 210	0	0	3
Plant Ecology, Bot. 307	3	0	0
Meteorology, Phys. 209	0	3	0
Forest Finance, For. 308	0	3	0
Methods of Research in Forestry, For. 311	0	0	3
Statistical Methods, Econ. 312	3	3	0
Elective in Social Science Group	0	0	3
Electives	3	3	3
	18	21	19
Summer Camp 1936			
Silviculture, For. s212			3
Field Study in Soils, Soils s280			3
Mensuration III, For. s203			3
			9

Senior Year

Logging, For. 303	3	0	0
Lumbering, For. 304	0	3	0
Seasoning, For. 305	0	0	3
Diseases of Forest Trees, Bot. 208	3	0	0
Silviculture, III, IV, For. 301, 302	3	3	0
Forest Management, For. 306, 307	3	3	0
Seminar, For. 310	0	2	0
Forest Products, For. 206	3	0	0
Forest Utilization, For. 207	0	0	3
Timber Appraisal, For. 309	0	0	3
Elective in Social Science Group	0	3	0
Electives	3	3	3
	18	17	12

LANDSCAPE ARCHITECTURE

A comparative study of Landscape Architecture with Architecture, the oldest art of design, will disclose the fact that distinct parallelism exists between these two fields of human endeavor. Not only in the character and extent of the training required in each case is this shown, but also in the division of work which takes place, and in the relationships existing among those responsible for various parts of the work in the practice of these two closely associated professional fields.

Training in Landscape Architecture is a composite derived from the fields of the fine arts, certain branches of engineering, and ornamental horticulture. Properly it is dominated by the principles of design, and therefore correctly classed with Architecture, Sculpture and Painting. Its province is the design of landscapes, and the preparation of plans and specifications for their construction.

Training in Landscape Construction is also a composite derived from the same fields, but with emphasis upon the materials and methods of construction employed in Civil Engineering and ornamental horticulture. Its province is the execution of plans and specifications for landscapes as prepared by the landscape architect or designer.

Training in Landscape Gardening is essentially ornamental horticulture, with some knowledge of the principles of design and of construction. Its particular province is the maintenance of designed and constructed landscapes.

The curriculum in Landscape Architecture is strictly undergraduate work, and is designed to provide a broad and thorough foundation for the additional post-graduate training required by the profession for entrance into its ranks. Such subsequent training, together with some professional practice should present an open door to the entire field of the Landscape Architect, of the City Planner, or of the Regional Designer, as the professional student may elect.

Students who wish to fit themselves for work in Landscape Construction or in Landscape Gardening will for their first two years pursue the basic curriculum for Agriculture, with substitutions from other curricula as indicated. The outline of the courses for the last two years will provide the necessary differentiation between these two lines of work. Specialization in the present day demands that technical training for specific lines of human endeavor shall be most efficient.

CURRICULUM IN LANDSCAPE ARCHITECTURE

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Trigonometry, Analytical Geometry, Math. 101, 102, 103	6	6	6
Composition, Eng. 101	3	3	3
Botany, General and Systematic, Bot. 101, 102, and 204	4	4	3
Engineering Drawing II, and Descriptive Geometry, M.E. 102, 103	3	3	3
Arboriculture, L.A. 106	1	1	2
Military Science I, Mil. 101 or	2	2	2
Human Relations, Soc. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	20	20	20

Sophomore Year

Business English and Technical Writing, Eng. 120, 324	3	3	0
Plant Physiology, Bot. 209	0	0	5
Plant Propagation and Nursery Practice, Hort. 102	3	0	0
Physical Geology, Geol. 120	0	0	4
Introduction to Economics, Econ. 102	0	3	0
Introduction to Psychology, Psychol. 101	3	0	0
Introduction to Architecture, A.E. 100	3	0	0
Elements of Architecture, A.E. 101	0	3	3
Surveying, Theoretical, C.E. 206	3	3	0
Field Surveying, C.E. 207	1	1	1
Plant Materials, Woody Plants, L.A. 216	2	2	2
Theory of Landscape Design, L.A. 218	0	3	3
Military Science II, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	21

Junior Year

Plant Materials: Annual and Herbaceous Plants, L.A. 217	0	0	2
Plant Ecology, Bot. 307	3	0	0
History of Landscape Design, L.A. 219	3	3	0
Landscape Design I, L.A. 220	4	4	4
Public Speaking, Eng. 160	0	0	3
Shades and Shadows, A.E. 102	2	0	0
Freehand Drawing II, Pencil, A.E. 104	2	0	0
Freehand Drawing I, Water Color, A.E. 103	0	2	0
Freehand Drawing IV, Charcoal, A.E. 106	0	0	2
Perspective Drawing, A.E. 201	0	0	2
Economic Zoology and Entomology, Zool. 102, 204	0	4	4
History of Architecture, A.E. 205	3	3	0
Topographic Drawing, C.E. 208 a	0	1	0
Electives	3	3	3
	20	20	20

Senior Year

Planting Design, L.A. 221	3	3	3
Landscape Design II, L.A. 222	4	4	4
City Problems, L.A. 223	0	3	0
Landscape Construction, L.A. 225	2	2	2
Pencil Sketching, A.E. 107	3	0	0
Accounting for Engineers, Econ. 112	0	0	3
Appreciation of Fine Arts, A.E. 208	3	3	3
Electives	3	3	3
	18	18	18

THE AGRICULTURAL EXPERIMENT STATION

The North Carolina Agricultural Experiment Station was established originally as a division of the State Department of Agriculture in accordance with an act of the General Assembly of 1877. Its work was greatly promoted by an act of Congress of 1887, known as the Hatch Act, which contributed a definite sum to each State for the purpose of making investigations in agriculture. The funds for the Experiment Station were further supplemented by an act of Congress of 1906, known as the Adams Act, and again the same way by an act of Congress of 1925, known as the Purnell Act. Under the requirements of the Hatch Act the Station became a department of the College.

The Agricultural Experiment Station embraces a central farm located at the College and a corps of trained investigators who devote their time and attention to solving the more important problems in soils, crops, animal industry, dairying, horticulture, poultry, plant diseases, and entomology, rural sociology, and agricultural economics.

Some one hundred and ninety different projects have been approved and are being investigated by these workers.

"The agricultural research of the College and Experiment Station have been materially strengthened through the inauguration of plans whereby teachers in agriculture and the biological sciences have been given some time to do research. This has been definitely organized and is now administered under the Experiment Station, making it possible to coördinate related research work, and making possible closer coöperation between the teaching and research group."

Six branch Experiment Stations of the State Department of Agriculture are used coöperatively with the College for work in the field on the different soils and under the different climatic conditions of the State.

The Station conducts a large correspondence with farmers and others concerning agricultural matters, and it takes pleasure in receiving and answering questions. The Agricultural Experiment Station is always glad to welcome visitors and to show them the work in progress.

The purposes of the Agricultural Experiment Station are:

To carry on experiments for the improvement of agriculture which will be of service to the farmers and to the agricultural teachers and extension workers;

To demonstrate improved methods of agriculture to the farmers of the State, and

To publish bulletins relating to agriculture, embodying the results of experiments, and to distribute them to the people of the State, thereby furthering the cause of agricultural progress.

CO-OPERATIVE AGRICULTURAL EXTENSION WORK

The Agricultural Extension Service of the College is conducted in cooperation with the State and the United States Department of Agriculture and the various counties of the State. The work is supported by Federal

funds derived from the Smith-Lever Act, from State appropriations which supplement the Smith-Lever Fund, and from county funds. The purposes of the Agricultural Extension Service are: (1) To carry new agricultural information and good practices to the farmers and farm women of the State through the County Agricultural and Home Demonstration Agents; (2) To conduct agricultural clubs for the boys and girls of the State, in which the young people are taught to grow crops and rear animals according to the teachings of modern agriculture; (3) To publish monthly letters and bulletins for the aid of extension workers and for the benefit of farmers; (4) To organize club schools during the summer, at which the members are given two or three days of technical instruction. In addition to these club schools there is also held at State College a short course for members of all clubs.

COLLEGE EXTENSION COURSES IN AGRICULTURE

General information about College extension and correspondence courses may be found elsewhere in this catalog, and bulletins giving detailed information are issued from time to time.

THE DEPARTMENT OF EDUCATION

THOMAS EVERETT BROWNE, *Director*

The Department of Education at State College, operating as a Department of the Division of Education of the Greater University of North Carolina, will continue to make its contribution to the agricultural, industrial, and economic life of North Carolina in a very distinctive and definite fashion. The specific function of this department will be to prepare teachers and educational leaders in the agricultural and technological fields.

This preparation will involve the guidance and direction of those students interested in teaching as a vocation in the selection of courses, in planning their professional careers, in their observation of teaching and in their programs of directed teaching. Members of the staff of the department make arrangements for observation and practice teaching in selected high schools of the State and supervise the work of these students while they are out teaching. All trainees are given an opportunity to meet the requirements of the State Department of Public Instruction with respect to observation and practice teaching.

Not only does this preparation involve a mastery of subject-matter courses in the teaching fields of their choice, but the completion of a gamut of professional courses including educational psychology, principles, and special methods of teaching and administration.

The Department of Education coöperates closely with all the schools on the campus, where the subject-matter courses for the various teaching fields are given. Its chief function is to provide the professional training for the student preparing to teach, and to advise, guide, and assist the student in getting ready for entrance into the teaching profession and in securing employment in his chosen vocation. While the main objective of the department is to provide definite and specific curricula for those students who have chosen teaching as a profession, it also serves those students in other curricula who wish to choose elective work in education.

AGRICULTURAL EDUCATION

The preparation of men to occupy positions as teachers of vocational agriculture in the high schools of the State, qualifying under the provisions of the Smith-Hughes Law, is one of the distinct activities of the College. State College is the designated teacher-training institution for teachers of agriculture in the white schools.

The program for the preparation of teachers of agriculture provides for the participation of the students in as many of the activities of agriculture teaching as is practicable, especially in organizing and conducting evening classes, and in carrying on community work and supervised practice.

Provision is made for seniors to teach under the supervision of the staff in agricultural education, assisted by the regular teachers of agriculture with whom they are carrying on their practice.

Advanced courses in agricultural teaching are offered and graduate students are afforded the opportunity of making studies of problems of their special interests.

TEACHERS OF INDUSTRIAL ARTS

The preparation of qualified teachers of Industrial Arts subjects is an essential problem of our Public School program. Our supply of teachers is less than the demand. This makes it necessary to seek candidates at institutions in other states for positions in North Carolina schools.

We recognize that the newer conditions will demand changes in school procedures. More attention to the study of industries will form an essential part of school work. Teachers of Shop Practice in Wood, Metal, Electricity, Auto-Mechanics, Printing, and Textiles, as well as Mechanical Drawing, need thorough preparation in subject matter. Principles in education, class management, methods, and opportunity for practice teaching form a part of this preparation. The demand is for teachers of day and evening classes in both general and vocational phases of Industrial Arts. Students in these courses are closely associated with the allied courses in Vocational Guidance.

RURAL SCHOOL PRINCIPALS AND TEACHERS

The rapid development of the consolidation movement in the rural school districts has created a demand for persons who are acquainted with the social and economic conditions of rural people. The rural school occupies a strategic position with reference to North Carolina's development. There are very definite social situations that are demanding organized effort. The rural school occupies the center of the community organization movement. The development of the rural sections, with their distinctive sociological and economic background, is dependent upon the proper type of rural organization. The principal and teachers in this community school must assume the leadership in this movement. For principal and teachers to measure up to the possibilities and opportunities of this distinctively rural development they must have specific training in rural sociology, rural social problems, rural economics, and rural community organizations.

The Department of Education is making a positive effort to train people for this particular situation. Liberal coöperative arrangements have been made with other schools and departments so that teachers preparing for the rural field take courses in the natural sciences and in the social sciences, designed to equip them for meeting the problems of the rural community.

PSYCHOLOGY

The general work in psychology is recognized as a fundamental part of students' general educational training. It aims to give the student a better understanding of human behavior as it develops in response to both biological and social forces. Certain specialized courses of an applied nature have been developed in response to the educational needs

of some curricula. Educational psychology formulates the basic principles upon which various educational methods and principles are developed, and is therefore required in all curricula in education. Advanced courses in educational psychology of a more specialized nature are designed to give the student a better understanding and appreciation of some particular phase of the individual pupils in their educational relations.

In addition to the work of instruction in the College and in the training of teachers, the division of psychology assists in the testing and advisory work with students, and is constantly called upon by school principals, teachers and parents to lend advice in a testing program or aid in making case studies of exceptional and problem children.

TEACHERS AND COUNSELORS OF VOCATIONAL GUIDANCE

The increasing interest in vocational guidance is making demands for teachers who are prepared to participate in organization phases. Effective vocational guidance is dependent upon hearty coöperation of all teachers in the school system. There is a growing need for leaders who are familiar with subject matter, tests and measurements, school objectives and practices, and the requirements of various occupations, trades, and professions. One who wishes to undertake this work as a leader must realize the importance of the collection and preparation of materials for the use of teachers and pupils and the qualifications essential for counseling individuals and groups. Members of the faculty of the Department of Education will be glad to discuss problems with students desiring to enter this field.

REQUIREMENTS FOR GRADUATION

The requirement for graduation in the Department of Education is the satisfactory completion of one of the curricula with the number of points equal to the number of term credits required, which in no case is less than 225 after 1938. Students graduating in the curriculum in High School Teaching in 1937 will be required to complete 212 credits, and those graduating in 1938 will be required to complete 219 credits with an equal number of points in each case. For graduation in Agricultural Education, 218 credits and 218 points will be required in 1937 and 221 credits and 221 points in 1938. In Industrial Education 221 credits and 221 points in 1937, and 225 credits and 225 points in 1938 are required for graduation.

Students who enter with advanced standing are allowed one point for each term credit accepted.

All students in Education will be required to take at least twenty-seven (27) term credits in Education, eighteen (18) term credits in Language, eighteen (18) term credits in Science, eighteen (18) term credits in Social Science, twelve (12) term credits in Military or the alternative, and six (6) in Physical Education. The credits required for graduation are to be chosen from the technical subjects listed in the several curricula and from the electives.

DEGREES

Students completing the curriculum in Agricultural Education will be granted the degree of Bachelor of Science in Agricultural Education, and students completing the curriculum in Industrial Education will be granted the degree of Bachelor of Science in Industrial Education. Students completing all other curricula in the Department of Education will be granted the degree of Bachelor of Science in Education.

CURRICULA

The following curricula are offered in the Department of Education. For specific information about any of the curricula write to the person whose name appears after the curriculum, all of whom may be addressed at State College Station, Raleigh.

1. Curriculum for Teachers of Agriculture (Professor L. E. Cook);
2. Curriculum for Teachers of Industrial Arts (Professor E. W. Boshart);
3. Curriculum for High School Teachers (Professor M. F. Showalter).

CURRICULUM FOR TEACHERS OF AGRICULTURE

Freshman Year

COURSES	CREDITS First Term	Second Term	Third Term
Composition, Eng. 101	3	3	3
General Inorganic Chemistry, Chem. 101-3-5	4	4	4
General Botany, Bot. 102	0	4	0
General Zoology, Zool. 101	4	0	0
Mathematical Analysis, Math. 100 a-b-c	3	3	3
Economic History, Hist. 101	3	3	3
Physical Geology, Geol. 120	0	0	4
Military Science I, Mil. 101, or Alt. Human Relations, Soc. 101	2	2	2
Fundamental Activites and Hygiene, P.E. 101	1	1	1
	20	20	20

Sophomore Year

Farm Equipment, Agr. Eng. 130	3	0	0
Soils, Soils 115	0	0	4
General Economics, Econ. 103	3	3	0
Agricultural Economics, Agr. Econ. 260	0	0	3
Physics for Agr. Students, Phys. 105	5	0	0
Animal Physiology, Zool. 201, or Plant Physiology, Bot. 209	0	0	5
Economic Zoology, Zool. 102	0	4	0
General Botany, Bot. 101	4	0	0
Introduction to Organic Chemistry, Chem. 241	0	4	0
Animal Nutrition I, A.H. 101	0	3	0
General Poultry, Poul. 101	0	3	0
Principles of Forestry, For. 104	3	0	0
General Horticulture, Hort. 101	0	0	3
General Field Crops, F.C. 101	0	0	3
Military Science II, Mil. 102, or Alt.	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	20	21

***Junior Year

English, elective	3	0	3
Education, Ed. 203, 208	3	3	3
Teaching Farm Shop Work, Agr. Eng. 217	3	3	0
General Economics, Econ. 103	3	3	0
Agricultural Economics, Econ. 260	0	0	3
Soil Fertility, Soils 265	3	0	0
Fertilizers, Soils 310	0	3	0
Rural Sociology, Rural Soc. 302	0	3	0
*Diseases of Field Crops, Bot. 201	3	0	0
Economic Entomology, Zool. 204	0	0	4
**Electives	3	3	3
	21	18	16

***Senior Year

English, elective	0	0	3
Materials and Methods in Teaching Agriculture, Ed. 312	0	5	0
Secondary Education in Agriculture, Ed. 326	0	0	3
Principles of Teaching, Ed. 306	3	0	0
Observation and Directed Teaching, Ed. 308	0	5	0
Methods of Teaching Agriculture, Ed. 307	5	0	0
Evening Classes and Community Work, Ed. 311	0	5	0
Animal Hygiene and Sanitation, A.H. 221	0	0	3
Agricultural Marketing, Agri. Econ. 265	3	0	0
Community Organization, Rural Soc. 305	0	0	3
**Electives	3	0	3
	14	15	15

* Diseases of Fruit and Vegetable Crops, Bot. 202 may be substituted for Bot. 201.

** Options and electives must be chosen with the approval of the adviser.

*** A new curriculum is being introduced. The freshman and sophomore years conform to the new organization; the junior and senior years follow the old plan.

CURRICULUM FOR TEACHERS OF INDUSTRIAL ARTS

Freshman Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
Mathematical Analysis, Math. 100 a-b-c or Algebra, Trigonometry and Analytical Geometry, Math. 101, 102, 103	3 or 6	3 or 6	3 or 6
General Chemistry, or Optional Science	4	4	4
Engineering Drawing II, M.E. 102	3	3	0
Descriptive Geometry, M.E. 103	0	0	3
Industrial Arts, Ed. 106	3	3	3
Military Science I, Mil. 101 or World History, Hist. 104	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	19 or 22	19 or 22	19 or 22

Sophomore Year

Business English, Eng. 120, Technical Writing, Eng. 324, Public Speaking, Eng. 160	3	3	3
Physics for Engineers, Phys. 104	4	4	4
Economic History, Hist. 101	3	3	3
Project Design, Ed. 232, A and B	0	3	3
Freehand Drawing I, II, IV, A.E. 103, 104, 106	2	2	2
Shop Work, M.E. 107, 108	0	2	2
Military Science II, Mil. 102 or *Elective	2	2	2
Sport Activities, P.E. 102	1	1	1
Elective	4	0	0
	19	20	20

Junior Year

Educational Psychology, Ed. 203	3	3	0
General Sociology, Soc. 103	3	3	0
Introduction to Economics, Econ. 102	3	0	0
Business Law, Econ. 211	0	0	3
Vocational Education, Ed. 321	0	3	0
Visual Aids, Ed. 208	0	0	3
Practices in Industrial Arts Teaching, Ed. 233 A, B	0	3	3
Metal Shop, M.E. 251	3	3	0
Electric Shop, E.E. 110	0	0	3
Problems in Secondary Education, Ed. 332	0	0	3
†Elective	8	5	5
	20	20	20

Senior Year

Field Work in Secondary Education, Ed. 333	0	0	0
Vocational Guidance, Ed. 320	0	0	3
Methods in Industrial Arts Teaching, Ed. 322	4	0	0
Observation and Directed Teaching, Ed. 344	0	6	0
Furniture Designs and Rod Making, M.E. 205	3	3	3
†Elective	11	6	12
	18	15	18

* Elective Shop Work should be taken in fields available as in Textiles, Woodshop, Machine Shop, and Foundry.

† With aid of advisors individuals will elect as follows: In junior year, one sequence in history and another in industrial problems. In the senior year, one sequence in history and another in sociology.

CURRICULUM FOR HIGH SCHOOL TEACHERS

(Students of junior and senior standing only may be admitted to this curriculum.)

Freshman Year

COURSES	CREDITS First Term	Second Term	Third Term
Composition, Eng. 101	3	3	3
Economic History, Hist. 101	3	3	3
General Zoology, Zool. 101	4	0	0
[1]Human Physiology, Zool. 103	0	4	0
Introduction to Psychology, Psychol. 101	0	0	4
General Chemistry, Chem. 101, 103, 105, or General Physics, Phys. 101, or [2]Chemistry, Physics, Geology Sequence	4	4	4
[3]Mathematical Analysis, Math. 100 a-b-c	3	3	3
Military Science I, Mil. 101, or [4]Human Relations, Soc. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	20	20	20

Sophomore Year

Elective Literature or Modern Language	3	3	3
General Sociology, Soc. 103	3	3	0
Elective Sociology	0	0	3
[5]Science Elective	3–4	3–4	3–4
[6]Two Teaching Options and Electives	6–7	6–7	6–7
Military Science II, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	19	19	19

Junior Year

Educational Psychology, Ed. 203	3	3	0
Problems in Secondary Education, Ed. 332	0	0	3
The Teaching of Mathematics, Ed. 341, or The Teaching of English, Ed. 340, or The Teaching of French, Ed. 343, or Elective	0	0	3–6
General Economics, Econ. 103	3	3	3
[7]Two Teaching Options and Electives	12	12	6–9
	18	18	18

Senior Year

The Teaching of Science, Ed. 339, or The Teaching of History, Ed. 342, or Elective	3–6	0	0
Special Methods Laboratory, Ed. 350	0	3	0
Observation and Directed Teaching, Ed. 344 or Elective Education	0	6	0
Field Work in Secondary Education, Ed. 333	0	3	0
[7]Two Teaching Options and Electives	12–15	6	18
	18	18	18

[1] Teachers of Science will defer Human Physiology until later and substitute Zoology 101.

[2] Teachers of Science will take Physics or Chemistry. Other students will take the Chemistry, Physics, and Geology sequence.

[3] Students who expect to continue in Mathematics will substitute other work for this sequence and will take Mathematics 101, 102, 103 in the sophomore year. Teachers of Physical Education will substitute Hygiene, P.E. 110, in the third term. In special cases this sequence may be deferred until the sophomore year and modern language substituted.

[4] No credit in Human Relations for juniors and seniors.

[5] Teachers of Science will take Chemistry or Physics.

[6] Teachers of Science will take Botany 101 and 102.

[7] A minimum of 27 term credits in Language and Literature is required of all students. Sufficient work must be chosen in this group in the junior and senior years to complete this requirement.

TEACHING OPTIONS

1. Science—72 credits, to include Botany 8, Zoology 8, Chemistry 12, Physics 12, Geology 9, and 12 additional credits in one of the following groups: Botany and Zoology, Chemistry, or Physics.

2. Mathematics—26-30 credits, to include College Algebra, Trigonometry, Analytical Geometry, Differential and Integral Calculus, and History of Mathematics.

3. History and other Social Science—72 credits, to include Ancient and Medieval History 6, Modern European History 9, American History 12, North Carolina History 3, Government 9, Economics 9, Sociology 9, and Physiography 3.

4. English—45 credits, to include Composition 9, American Literature 9, English Literature 9, Advanced Grammar and Composition 3, and Development of Language 6.

5. French—27 credits in addition to elementary French, or two units of entrance credit in French, and 6 credits in Development of Language.

6. Physical Education for Men—45 credits, to include Fundamental Activities, Sports Activities, General Zoology, Human Physiology, Hygiene, Games and Organized Play, Gymnastics, Track and Field, Football, Basketball, Baseball, Junior Practice Teaching, Medical and Health Supervision, History and Principles, Organization and Administration, and Senior Practice Coaching.

The work in Physical Education should be distributed as follows:

Sophomore Year

FIRST TERM	SECOND TERM	THIRD TERM
Games and Organized Play, P.E. 111	Gymnastics, P.E. 112	Track and Field, P.E. 113

Junior Year

Football, P.E. 114 Junior Practice Teaching, P.E. 117	Basketball, P.E. 115 Junior Practice Teaching, P.E. 117	Baseball, P.E. 116 Junior Practice Teaching, P.E. 117

Senior Year

Medical and Health Supervision, P.E. 119	History and Principles, P.E. 118	Organization and Administration, P.E. 120
Senior Practice Coaching, P.E. 121	Senior Practice Coaching, P.E. 121	Senior Practice Coaching, P.E. 121

THE SCHOOL OF ENGINEERING

WALLACE CARL RIDDICK, *Dean*

HARRY TUCKER, *Director of Engineering Experiment Station*

ORGANIZATION

The School of Engineering of the North Carolina State College of Agriculture and Engineering embraces Aeronautical, Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Geological, Highway, Industrial, Mechanical, and Sanitary Engineering and the Engineering Experiment Station.

State College has progressively increased its emphasis on engineering education for the youth of the State. The objectives of the School of Engineering are defined, and its threefold program of instruction, research, and extension established. The instruction in engineering has been improved and advanced, important research is in progress with its stimulating effect upon teachers and students, and the Extension Service is fulfilling its promise of usefulness.

The reasons for the establishment of the College and the support of the General Assembly indicate that this is the technical institution of the State for Engineering as well as for Agricultural education. The State has already made large investments for buildings and equipment for engineering here.

Measured by its facilities for instruction, its shops and laboratories, its technical and industrial equipment, the personnel of its force for teaching and investigation, and the number of students, the School of Engineering is substantially equipped to render, and is rendering, great service in engineering education and in the State's industrial development.

The location of the College is particularly favorable for the study of engineering. Raleigh, besides being the Capital and having the several State Departments, the State Highway Commission, the State Board of Health, and other important State institutions, is a rapidly growing city, marked by modern developments in residential, commercial, and municipal construction. This local building and engineering goes on the year round, and affords excellent opportunities for observation and study. There are in the vicinity commercial chemical works, woodworking mills, railway shops, machine shops, airport, and manufacturing industries.

Raleigh is also a center from which electric power is distributed to a large section of the State. A transformer and meter substation adjoins the campus, and from it high-tension lines radiate in four directions. Hydro-electric and steam-electric plants are within easy reach on the Cape Fear River. The important systems of highways centering in Raleigh are exceptionally valuable for the observation and study of the construction, use, and maintenance of roads.

THE PURPOSE OF THE SCHOOL

The purpose of the School of Engineering is threefold: (1) to educate men for professional service in Aeronautical, Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Geological, Highway, Industrial, Mechanical, and Sanitary Engineering, and at the same time to equip them to participate in commercial and public affairs and to develop their capacities for intelligent leadership; (2) to aid in the development of our commerce and industry through research and experimentation, to investigate natural resources and demonstrate their value to the people of the State; (3) to coöperate with private companies, municipalities, and public authorities for the purpose of improving the public utilities, and with commercial and industrial organizations through scientific research for increasing technical skill, improving the value of manufactured products, and eliminating waste.

In order to make effective these purposes the School of Engineering offers instruction in Aeronautical, Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Geological, Highway, Industrial, Mechanical, and Sanitary Engineering and maintains the Engineering Experiment Station and the Extension Service. The courses of instruction are grouped into programs of studies or curricula, definitely aimed to prepare for professional service, as:

Engineers in Aviation.

Architect, Architectural and Structural Engineers.

Ceramic Engineers and Technologists and Managers in the Ceramic Industry.

Construction Engineers.

Engineers and Managers in Chemical Industries and in the Vegetable Oil Industry.

Engineers in Professional Practice and as Consulting Engineers.

Engineers in Hydro-Electric Developments.

Engineers in Electrical Manufacturing and Contracting and in Central Electric Station and Telephone Service, in the Maintenance and Operation of Electrically-driven Mill Equipment, in Lighting and Illumination, and in Railway Signaling.

Engineers in the Construction, Maintenance, and Operation of Steam and Electrical Railways.

Engineers in the Design and Manufacture of Machinery, in the Operation of Shops, and in the Furniture Industry.

Geological Engineers.

Highway Engineers.

Industrial Engineers and Engineers in the management of industries.

Municipal Engineers, Sanitary Engineers, City Managers, and Engineers in Public Utility and Health Services.

Sales Engineers.

Research Engineers.

CURRICULA

All of the curricula contain courses of general educational value for the purpose of preparing students for those activities which constitute the duties of citizenship in a democracy. However the curricula are primarily technical and practical, and designed to prepare young men for professional practice and for definite vocations as well as for leadership in the industrial advancement of the State.

The instruction is such as will foster the individual talent, imagination, and initiative of students and instill in them ideals of accomplishment, service, and good citizenship, while assuring to them that scientific education and practical training which will prepare them for professional service and leadership in engineering and in industry. In this way the School of Engineering aids in the advancement of commerce and industry and furthers the development and economic utilization of the State's resources for the general welfare.

All the engineering curricula emphasize thoroughness in the study of English and of the sciences—Mathematics, Physics, and Chemistry—with a thorough drill in the application of fundamental principles to engineering and industrial problems. Engineering is taught as a profession, and the students come to realize that it is both honorable and learned, and that it offers exceptional opportunities for service.

The several engineering curricula have a common freshman year and differ only slightly in the sophomore year, in which the students study English, Mathematics, Drawing, Shop Work, Physics, and Chemistry. In the junior and senior years the students are directed definitely to the professional aims in the carefully considered and well-balanced curricula in Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Geological, Highway, Industrial, Mechanical, and Sanitary Engineering. Arrangements have been made for instruction in the design and manufacture of furniture and in the manufacture of vegetable oils.

REQUIREMENT OF SUMMER WORK

At least six weeks of summer employment under the direction of the School of Engineering, preferably in the summer following the junior year, is a specific requirement for graduation in Engineering.

The purpose of this is to have every student before graduation get the valuable experience of actual work with responsibility and pay in the field of his vocation. Departmental advisers will aid in securing summer employment and will supervise and direct it.

INSPECTION TRIPS

In order to familiarize himself with the practice of his profession, each senior in Engineering is required as a part of his curriculum to go on the departmental inspection trips. None will be excused except for grave reasons.

ENGINEERING CURRICULA FOR UNIVERSITY AND COLLEGE GRADUATES

Selected courses leading to the degree "Bachelor of Science" in Engineering are offered to graduates of universities and standard colleges.

These are arranged in accordance with the vocational aim of the individual student, and in the light of credits presented from the institution from which the student has geen graduated, subject to the approval of his adviser and the director of instruction. In cases where the student presents enough credits which may be used for courses required in his curriculum he may be graduated with a B.S. degree in one year. In no case should it take more than two years to complete the work for his B.S. degree.

SHORT COURSE FOR ELECTRICAL METERMEN

A school for electrical metermen, lasting one week, is conducted during the second term. The work consists of lectures by meter experts and members of the faculty, demonstrations of metering apparatus and inspection, calibration and adjustments of meters of all types. The Electrical Engineering laboratories are well equipped with rotating standards of all makes, voltage regulators, phase shifters, load boxes, and phantom loads, and a large collection of watt-hour meters.

DEGREES

Upon the satisfactory completion of one of the curricula in engineering the degree of Bachelor of Science in Engineering is conferred.

The degree of Master of Science in Engineering is offered for the satisfactory completion of one year of graduate study in residence. Candidates for the degree of Master of Science in Engineering enter and are enrolled as graduate students.

The professional degree of Architectural Engineer, Ceramic Engineer, Chemical Engineer, Civil Engineer, Electrical Engineer, or Mechanical Engineer, may be conferred upon graduates after three years professional practice in responsible charge of important work, and upon the acceptance of a thesis on a subject related to the practice in which the applicant has been engaged.

ADMISSION

Each applicant for admission must present evidence that he has satisfactorily completed a four-year course of not less than fifteen units in a secondary school which is approved by the State Department of Education.

Each applicant for admission must be at least sixteen years old and must submit fifteen units of credits from an accredited high school. Of these units 8.5 are in specified subjects and 6.5 in elective subjects.

ADVANCED STANDING

Students who have attended colleges of approved standing will be given appropriate credit for work completed there, upon the presentation of the proper certificate to the Dean of the School of Engineering, who will determine the credits for the curriculum which the student wishes to take.

REQUIREMENTS FOR GRADUATION

The requirements for graduation in Engineering are the satisfactory completion of all the courses in one of the prescribed curricula (see tabulations

of curricula on the pages following), a total of not less than 240 term credits, and also not less than 240 points calculated under the point system.

Of the minimum of 240 term credits required for graduation in Engineering 117 are common to all curricula, that is, 30 term credits in Mathematics, 18 in Language, 9 in Economics, 12 in Chemistry, 12 in Physics, 9 in Mechanics, 9 in Drawing and Descriptive Geometry, 12 in Military Training (or Social Science and Humanities alternatives) and 6 in Physical Education.

Each of the curricula permits election of at least 18 term credits and contains not more than 72 special technical term credits.

CURRICULA IN ENGINEERING

The curricula in engineering have been revised and are in effect in entirety for students beginning them September, 1934, or later. The senior years for the academic year 1936-37, however, remain as stated in the 1934 Catalog.

FRESHMAN YEAR OF ALL CURRICULA IN ENGINEERING

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Algebra, Trigonometry, Analytical Geometry, Math. 101, 102, 103	6	6	6
Composition, Eng. 101	3	3	3
General Inorganic Chemistry, Chem. 101, 103, and 105	4	4	4
Engineering Drawing II, M.E. 102	3	3	0
Descriptive Geometry, M.E. 103	0	0	3
Military Science I, Mil. 101, or World History, Hist. 104	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	19	19	19

Summer requirement following the freshman year in Architectural, Ceramic, and Electrical Engineering:

Surveying—C.E. s102, 3 credits.

ARCHITECTURAL ENGINEERING

The instruction in this curriculum is arranged mainly to lay a broad foundation for the subsequent professional life of its graduates. The curriculum is based on the belief that an architect should have an education in liberal studies, as well as a fundamental and technical knowledge; the other arts and sciences in their relation to architecture, and that his training in design should teach him to regard building construction as an expression of his art as well as a useful accomplishment.

Architecture is generally recognized as the first and greatest of the Fine Arts, and hence a wide sympathy with every form of culture is regarded as essential. The practice of the profession presents many aspects of an exacting and thoroughly scientific nature, and the training of the architect must combine those things which are useful with those that are purely ornamental. The aim is to train men for the practice of their profession, and the curriculum is designed so that a just relation and balance may be maintained between the practical and the æsthetic.

Facility in the technique of drawing is emphasized, and carefulness and exactitude are demanded in the treatment of the various fundamental problems of construction.

CURRICULUM IN ARCHITECTURAL ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Surveying, C.E. s102, 3 credits, is required in the summer immediately following the freshman year.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential Calculus, Integral Calculus I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Physics for Engineers, Phys. 104	4	4	4
Wood Working, M.E. 106	3	0	0
Mechanics, C.E. 200	0	3	3
Introduction to Architecture, A.E. 100	3	0	0
Elements of Architecture, A.E. 101	0	3	3
Shades and Shadows, A.E. 102	2	0	0
Freehand Drawing I, water color, A.E. 103	0	2	0
Perspective Drawing, A.E. 201	0	0	2
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	22	22	22

Junior Year

Effective for the academic year, 1936-37.

Mechanics, C.E. 200	3	0	0
Strength of Materials, C.E. 203	0	3	3
Materials Testing Laboratory, H.E. 204	0	1	0
Materials of Construction, C.E. 201	3	0	0
Sanitary and Mechanical Equipment of Buildings, C.E. 202	0	0	3
***Social Science Options	3	3	3
Freehand Drawing II, III, and IV, Pencil, Pen & Ink, Charcoal, A.E. 104, 105, 106	2	2	2
Architectural Details, A.E. 111	0	0	2
Practical Photography, A.E. 112	1	0	0
Architectural Design I, A.E. 202	3	3	3
History of Architecture, A.E. 205	3	3	0
History of Ornament, A.E. 206	0	3	0
Domestic Architecture, A.E. 209	0	0	2
Electives	3	3	3
	21	21	21

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.

Reinforced Concrete, C.E. 204	3	0	0
Graphic Statics, C.E. 209	1	0	0
Theory of Structures, C.E. 313	3	3	0
Specifications, C.E. 309	0	3	0
Electrical Equipment of Buildings, E.E. 105	0	0	3
General Economics, Econ. 103	3	3	3
Advanced Rendering, A.E. 203	1	1	1
Architectural Design II, A.E. 204	3	3	3
Architectural Office Practice, A.E. 210	2	2	2
Architectural Composition, A.E. 211	0	2	0
Architectural Estimates, A.E. 212	0	0	2
Electives	3	3	6
	19	20	20

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the course listed French M.L. 101. Those who substitute M.L. 101 for the sophomore English, will have to elect M.L. 201 in the junior or senior year to complete the requirement of two years of a Modern Language.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

*** Options in Social Sciences may be selected from the following group of subjects: Economics, Education, History, Psychology, and Sociology.

CERAMIC ENGINEERING

Ceramic Engineering includes the different phases of engineering which have to do with the study of all the materials and the manufacture of products of the silicate or non-metallic industries. The non-metallic minerals compose over 90 per cent of the earth's surface, and the industries based on them rank with the automobile and iron and steel industries in value of product. Principal among these products are those made of clay and minerals associated with clay, such as building brick, hollow tile, sewer pipe, refractories, wall and floor tile, tableware, pottery, electrical porcelain, chemical and sanitary stoneware, building glass, chemical glassware, enameled iron and steel, Portland and hydraulic cements, and limes.

North Carolina has enormous deposits of shale, clay, kaolin, feldspar, sand, and limestone, equal in quality to any in the United States, and with the introduction of modern processes and methods will produce in the future quantities of ceramic products and adequately develop its ceramic industries.

The demand for ceramic engineers has far exceeded the supply for a number of years past, there being less than 60 Ceramic engineers graduated in the United States each year, and it is with the idea of supplying this demand and developing the latent resources of North Carolina that a four-year curriculum in Ceramic Engineering, leading to the degree of Bachelor of Science in Engineering, is offered.

The instruction in Ceramic Engineering is enriched by the intensive investigation of ceramic resources and manufactures now under way in connection with the Engineering Experiment Station. Students will have the great advantage of these investigations along with their other instruction.

Courses in advanced subjects for graduate students are offered in Advanced Refractories and Furnaces, Industrial Adaptability of Clays, Designing of Ceramic Equipment and Plants, Glazes and Colors, and Ceramic Research.

The curriculum in Ceramic Engineering contains fundamental courses and courses in Ceramic, Geological, Civil, Electrical, and Mechanical Engineering, as well as Economics and Accounting, to provide for the general training in engineering with the particular study of Ceramic Engineering. The Ceramic Engineering courses consist of the theoretical and practical study of the mining, manufacturing, and testing of ceramic materials and products as well as the design of ceramic equipment and plants.

Graduates in Ceramic Engineering are employed in the Ceramic Industries as plant executives, research engineers, plant control engineers, sales engineers, product control engineers, plant designers and constructors, equipment manufacturers, consulting engineers, ceramic chemists, and technologists. Graduates of the department at State College, which now ranks fourth in registration in the United States, are successfully holding positions in all of these branches.

CURRICULUM IN CERAMIC ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Surveying, C.E. s102, 3 credits, is required in the summer immediately following the freshman year.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential Calculus, Integral Calculus, I and II, Math. 201, 202, 203	4	4	4
Qualitative Analysis, Chem. 211	4	0	0
Quantitative Analysis, Chem. 212	0	4	0
Physics for Engineers, Phys. 104	4	4	4
Engineering Geology, Geol. 201	3	0	0
Mineralogy, Geol. 230	0	0	3
*Business English, Public Speaking, and English Literature, Eng. 120, 160 and 220	3	3	3
Ceramic Materials, Cer.E. 103	0	3	0
Ceramic and Mining Processes, Cer.E. 104	0	0	3
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	20

Junior Year

Effective for the academic year 1936-37.

Mechanics, C.E. 200	3	3	0
General Economics, Econ. 103	3	3	3
Mechanical Drawing, M.E. 110	0	2	2
Drying Technology, Cer.E. 208	3	0	0
Firing Technology, Cer.E. 213	0	3	0
Ceramic Calculations, Cer.E. 209	0	0	3
Ceramic Products, Cer.E. 212	0	0	3
Heat Engineering III, M.E. 201	3	3	0
Mechanical Engineering Laboratory II, M.E. 202	1	1	0
Materials Testing Lab., H.E. 204	0	0	1
Advanced Mineralogy, Geol. 235	0	3	0
Physical Chemistry, Chem. 231	5	0	0
Accounting for Engineers, Econ. 112	0	0	3
Business Law, Econ. 211	0	0	3
Electives	3	3	3
	21	21	21

Summer requirements: six weeks industrial employment.

CERAMIC ENGINEERING OPTION

Senior Year

Effective for the academic year 1937-38.

Refractories, Cer.E. 301	0	0	3
Metal Enamels, Cer.E. 210	0	3	0
Bodies, Glazes, Colors, Cer.E. 207	3	0	0
Ceramic Lab., Cer.E. 300	3	3	3
Ceramic Designing, Cer.E. 303	0	5	5
Pyrometry, Cer.E. 214	1	0	0
Technical Writing, Eng. 324	3	0	0
Elements of Electrical Engineering I, E.E. 220	0	3	3
Strength of Materials, C.E. 203	3	0	0
Optical Mineralogy, Geol. 301	3	3	3
Electives	3	3	3
	19	20	20

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed Elementary German, M.L. 102. Such students are expected to take two years of German.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

CERAMIC TECHNOLOGY OPTION

Senior Year

Effective for the academic year 1937-38.			
Metal Enamels, Cer.E. 210	0	3	0
Refractories, Cer.E. 301	0	0	3
Bodies, Glazes, Colors, Cer.E. 207	3	0	0
Ceramic Lab., Cer.E. 300	3	3	3
Pyrometry, Cer.E. 214	1	0	0
Physical Chem., Chem. 331	0	4	4
Optical Mineralogy, Geol. 301	3	3	3
Physics-Heat, Physics 303	4	0	0
Technical Writing, Eng. 324	3	0	0
Metallography, M.E. 320	0	3	0
Electives	3	3	6
	20	19	19

All seniors will be required to go on the inspection trip as part of their curriculum.

CHEMICAL ENGINEERING

North Carolina is rapidly becoming the industrial and manufacturing center of the South. A large per cent of the total manufactured products of the State is chemical, with an annual valuation of over two hundred million dollars. Some of the largest chemical industries of the United States are located in North Carolina. Many other industries employ chemical engineering processes and principles. The municipalities are awake to the fact that chemical engineers are necessary to safeguard the healthfulness of the community by proper design and supervision of the water supplies. Competition is forcing the industries to abandon rule-of-thumb methods and to seek men trained in the principles of chemical engineering for supervision and exact control of their processes, plants and operation. Chemical Engineering, therefore, offers inviting opportunities for employment and promotion in a profession which is rendering a distinct service to the welfare and comfort of the people of the State.

Chemical Engineering pertains to the engineering problems of chemical industries and chemical processes. The curriculum offers technical training in the fundamentals of Chemical Engineering. It is arranged to equip trained engineers for any field of applied chemical work.

The chemical engineer is expected to determine the process, the material, design, and the economic capacity of the equipment needed. Efficient production requires exact control in every stage of the process. The student is taught the importance of devising efficient and economical methods, machinery and appliances; of discovering sources of loss and the remedy; of by-products; of recovering and converting waste products into useful substances, as well as industrial calculations of input, output, efficiency, and quality.

Instruction is given in the processes of manufacturing industrial chemical products and in the waterpower and fuel resources for such production. North Carolina is rapidly increasing its electro-chemical plants and its plants for manufacturing such products as paper, pulp, fertilizers, vegetable oils, leather, rubber goods, aluminum, metallurgical products, gas, asbestos products, fire extinguishers, paints, varnishes, shoe polish, fish oil and scrap, and tanning extracts. Careful study is made of industrial opportunities, and research is carried on to further the utilization of the natural resources of the State.

This department coöperates closely with several State Departments in such investigations as the complete analysis of fuel purchased for State Institutions, on materials used in highway work, in stream pollution and industrial studies of water supplies, in boiler feed waters, in corrosion resistance, and in examination of materials bought by the State on specification.

Graduates in Chemical Engineering may expect to find employment in such fields as chemical engineers in control work, industrial research, technologists, superintendents of chemical industries, and municipal engi-

neers, engineers in the State and Federal health service, consulting chemical engineers. manufacturers of chemicals and of chemical equipment, chemical salesmen and representatives, and as promoters of new chemical industries in the South. The curriculum includes basic courses in Chemistry, Physics, Mathematics, and fundamental engineering as a background for professional Chemical Engineering training, so that the graduate is prepared to enter successfully into any field of chemical activity.

CURRICULUM IN CHEMICAL ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential Calculus, Integral Calculus I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Introduction to Chemical Engineering, Chem.E. 101	1	1	1
Physics for Engineers, Phys. 104	4	4	4
Qualitative Analysis, Chem. 211	4	0	0
Quantitative Analysis, Chem. 212, 213	0	4	4
Shopwork, M.E. 104	1	1	1
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	20	20	20

Junior Year

Effective for the academic year 1936-37.

Mechanics, C.E. 200	3	3	0
Strength of Materials, C.E. 203	0	0	3
Organic Chemistry, Chem. 321	4	4	4
Industrial Chemistry, Chem.E. 201	3	3	3
Industrial Stoichiometry, Chem.E. 210	0	0	3
Chemical Engineering Laboratory I, Chem.E. 202	1	1	1
Physical Chemistry, Chem. 231	4	4	0
Mineralogy, Geol. 230	0	0	3
Elements of Electrical Engineering I, E.E. 220	3	3	0
Machine Shop, M.E. 218	1	1	0
Electives	3	3	3
	22	22	20

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.

Principles of Chemical Engineering, Chem.E. 300	3	3	3
Water Treatment, Chem.E. 204	3	0	0
Chemistry of Engineering Materials, Chem.E. 205	0	3	0
Electrochemical Engineering, Chem.E. 301	0	0	3
Chemical Engineering Lab. and Design II, Chem.E. 307	2	2	2
Heat Engineering III, M.E. 201	3	3	0
Economic Geology, Geol. 306	0	0	3
General Economics, Econ. 103	3	3	3
Accounting for Engineers, Econ. 112	3	0	0
Technical Writing, Eng. 324	0	3	0
Business Law, Econ. 211	0	0	3
Electives	3	3	3
	20	20	20

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed German, M.L. 102. Such students are expected to take two years of German.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

CIVIL ENGINEERING

I. General Civil Engineering
II. Highway Engineering
III. Construction Engineering
IV. Sanitary Engineering

The aim of the curricula in Civil Engineering is to give such training as will enable young men to take an active part in the work of advancing our State along material lines, such as developing its waterpower, building railroads and public highways, and constructing water supply and sewerage systems for our towns.

The theoretical and classroom work is supplemented with practical work in the field, drawing-rooms, and laboratories to demonstrate the relations existing between theory and practice. At the same time it is recognized that a successful engineer requires a well-trained mind—one that reasons logically, accurately, and quickly. Therefore, a thorough course is given in all those branches of applied mathematics which are used in the solution of engineering problems.

The work, accompanied as it is by the cultural training acquired through the instruction in Mathematics, English, Chemistry, Economics, Modern Languages, and Military Science, especially equips a young man to fit into the present-day needs of the country.

The curricula are arranged to give the student an understanding of the principles underlying the various branches of the profession and at the same time teach him to apply these principles to the practical problems with which the Civil Engineer has to deal.

Those students taking the general Civil Engineering curriculum may at the beginning of the senior year elect the Highway Engineering option, as set forth in the curriculum of Civil Engineering II, Highway Engineering.

Those students taking the general Civil Engineering curriculum may at the beginning of the junior year elect the Construction Engineering option, as set forth in the curriculum of Civil Engineering III, Construction Engineering.

Those students taking the general Civil Engineering curriculum may at the beginning of the sophomore year elect the Sanitary Engineering option, as set forth in the curriculum of Civil Engineering IV, Sanitary Engineering.

For instruction in Civil Engineering to demonstrate classroom problems the following are provided: Surveying instruments, plane tables, current meters, sextants, cement laboratory apparatus for demonstrating classroom problems.

Particular attention is called to the engineering construction options to the general curriculum in Civil Engineering, which have been introduced in response to the State-wide demand for education for building construction, and contracting.

CURRICULUM IN CIVIL ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

COURSES	CREDITS First Term	Second Term	Third Term
Differential Calculus, Integral Calculus, I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Physics for Engineers, Phys. 104	4	4	4
Metal Work, M.E. 108a	3	0	0
Theoretical Surveying, C.E. 206	3	3	3
Field Surveying, C.E. 207	1	1	1
Mechanics, C.E. 200	0	3	3
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	21

Surveying, C.E. s220, concurrent with Summer School—3 credits.

Junior Year

Effective for the academic year 1936-37.

Elements of Electrical Engineering, I, E.E. 220	3	3	0
Mechanics, C.E. 200	3	0	0
Materials of Construction, C.E. 201	3	0	0
Strength of Materials, C.E. 203	0	3	3
Engineering Drawing, C.E. 208	1	1	1
Hydraulics, C.E. 205	0	3	3
General Economics, Econ. 103	3	3	3
Highway Engineering, H.E. 201	0	3	3
Heat Engineering II, M.E. 115	0	0	3
Technical Writing, Eng. 324	3	0	0
†Electives	3	3	3
	19	19	19

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.

Engineering Geology, Geol. 201	3	0	0
Reinforced Concrete, C.E. 204	3	0	0
Theory of Structures, C.E. 313	3	3	0
Structural Design, C.E. 314	0	3	3
Railroad Economics, C.E. 306	0	3	0
Transportation, H.E. 302	0	0	3
Applied Astronomy, C.E. 301	0	0	4
Graphic Statics, C.E. 209	1	0	0
Materials Testing Laboratory, H.E. 204	0	1	1
Water Works, C.E. 305	0	3	0
Sanitary Engineering Laboratory, C.E. 307	1	1	0
Sewerage, C.E. 308	3	0	0
Business Law, Econ. 211	0	0	3
†Electives	6	6	6
	20	20	20

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed Spanish, M.L. 103. Such students are expected to take two years of Spanish.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

† At least 6 electives must come from Social Science Group.

CIVIL ENGINEERING II—HIGHWAY ENGINEERING

North Carolina has, during the past fifteen years, made remarkable progress in the building of good roads, and the beneficial effect of these well-constructed highways is being shown in the development of the State along social and industrial lines. Not only has the State undertaken, on a large scale, the building of an adequate highway system, but most of the counties and cities in the State have spent large sums in the building of new roads or the improvement of old roads. And what has already been done is possibly only a beginning, for it is likely that even larger road construction programs by the State and its political subdivisions will be necessary if the material prosperity of the State—dependent so largely on adequate transportation facilities—is to continue.

The building of roads and their proper maintenance are engineering problems to be handled by technically trained men. To meet the need and demand for such men the North Carolina State College offers a four-year curriculum in Highway Engineering. Since Highway Engineering is, fundamentally, a special division of the broad field of Civil Engineering, the curriculum for the first three years is identical with the regular Civil Engineering curriculum. In the fourth year, however, the student who specializes in Highway Engineering is given more specific instruction in those subjects pertaining to Highway Engineering. The entire curriculum is arranged so that graduates in this department will not only be well trained technically, but will have that broad general education so essential to success in engineering.

State College, due to its favorable location, offers unusual opportunities to young men to study Highway Engineering. Not only are the necessary facilities available for theoretical instruction, but there are in and near Raleigh many opportunities for studying the practical application of the principles of highway construction. Raleigh and Wake County have built, or have under construction, most of the different types of road surfaces; the laboratories of the State Highway Commission are available for inspection, and numerous experimental sections of road constructed by the Commission near Raleigh can be examined.

CURRICULUM IN HIGHWAY ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

Courses	Credits First Term	Second Term	Third Term
Differential Calculus, Integral Calculus I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Physics for Engineers, Phys. 104	4	4	4
Metal Work, M.E. 108a	3	0	0
Theoretical Surveying, C.E. 206	3	3	3
Field Surveying, C.E. 207	1	1	1
Mechanics, C.E. 200	0	3	3
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	21

Surveying C.E. s220, concurrent with Summer School—3 credits.

Junior Year

Effective for the academic year 1936-37.			
Elements of Electrical Engineering I, E.E. 220	3	3	0
Mechanics, C.E. 200	3	0	0
Materials of Construction, C.E. 201	3	0	0
Strength of Materials, C.E. 203	0	3	3
Engineering Drawing, C.E. 208	1	1	1
Hydraulics, C.E. 205	0	3	3
General Economics, Econ. 103	3	3	3
Highway Engineering, H.E. 201	0	3	3
Heat Engineering II, M.E. 115	0	0	3
†Electives	6	3	3
	19	19	19

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.			
Engineering Geology, Geol. 201	3	0	0
Reinforced Concrete, C.E. 204	3	0	0
Theory of Structures, C.E. 313	3	3	0
Structural Design, C.E. 314	0	3	3
Applied Astronomy, C.E. 301	0	0	4
Graphic Statics, C.E. 209	1	0	0
Materials Testing Laboratory, H.E. 204	0	1	1
Highway Engineering II, H.E. 301	3	3	0
Transportation, H.E. 302	0	0	3
Highway Office Practice & Design, H.E. 303	1	1	0
Modern Language	3	3	3
Business Law, Econ. 211	0	0	3
†Electives	3	6	3
	20	20	20

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed Courses in a Modern Language. Such students are expected to take two years of the Modern Language.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

† At least 6 electives must come from Social Science Group.

CIVIL ENGINEERING III—CONSTRUCTION ENGINEERING

This curriculum is offered in order to educate men for the profession of Engineering, particularly as it is related to construction.

North Carolina's progress indicates great increase in building and general construction. Construction needs more and better trained men to meet the immediate demands as well as to anticipate the greatly increased demands of the future. Builders, as few others, need to know at all times exactly where they stand on the projects they undertake. The contractor, to be successful, must conduct his business systematically and economically. Therefore, he must learn not only general engineering technique, but also something of Architecture and business methods and practices; he must delve further into construction and learn the principles involved, the methods, practices, and successful policies in use.

Combined into this curriculum are the fundamental courses in the Civil Engineering curriculum, a few courses in Architecture, a few additional courses dealing with business, and special courses in Construction Engineering in the junior and senior years.

The theory in the Construction Engineering courses is supplemented by frequent inspection trips to projects under construction, and particular emphasis is placed upon estimating, modern methods, and management of operations.

This curriculum is designed to prepare the student to enter the work of actual construction of modern structures and to lay a foundation for future work as owners, managers, or executives in the construction industry.

CURRICULUM IN CONSTRUCTION ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential Calculus, Integral Calculus I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Physics for Engineers, Phys. 104	4	4	4
General Economics, Econ. 103	3	3	3
Theoretical Surveying, C.E. 206	3	3	0
Field Surveying, C.E. 207	1	1	0
Mechanics, C.E. 200	0	0	3
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	20

Surveying, C.E. s220, concurrent with Summer School—3 credits.

Junior Year

Effective for the academic year 1936-37.

Mechanics, C.E. 200	3	3	0
Strength of Materials, C.E. 203	0	3	3
Elements of Electrical Engineering I, E.E. 220	3	3	0
Metal Works, M.E. 108a	3	0	0
Electrical Equipment of Buildings, E.E. 105	0	0	3
Construction Engineering I, C.E. 211	3	3	3
Engineering Geology, Geol. 201	0	0	3
Hydraulics, C.E. 205	0	3	0
Structural Clay Products, Cer.E. 105	0	1	0
Architectural Details, A.E. 111	0	0	2
Materials of Construction, C.E. 201	3	0	0
†Economics or Social Sciences	3	3	3
Electives	3	3	3
	21	22	20

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.

Reinforced Concrete, C.E. 204	3	0	0
Theory of Structures, C.E. 313	3	3	0
Structural Design, C.E. 314	0	3	3
Graphic Statics, C.E. 209	1	0	0
Materials Testing Laboratory, H.E. 204	0	1	1
Architectural Office Practice, A.E. 210	2	2	2
Construction Engineering II, C.E. 302	3	3	3
Construction Equipment, C.E. 303	3	0	0
Accident Prevention in Construction, C.E. 312	0	0	3
Sanitary and Mechanical Equipment of Buildings, C.E. 202	0	0	3
Specifications, C.E. 309	0	3	0
†Economics or Social Sciences	3	3	3
Electives	3	3	3
	21	21	21

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed Courses in a Modern Language. Such students are expected to take two years of the Modern Language.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

† To be selected with the advice of the head of the division of Construction Engineering.

CIVIL ENGINEERING IV—SANITARY ENGINEERING

The importance of Sanitary Engineering as it affects the health and life of the people needs no emphasis. The progress of the State of North Carolina in matters affecting health is known the country over. There is need for many more men trained in Sanitary Engineering. To meet this need, the curriculum in Sanitary Engineering is offered. In the main it is the curriculum in General Civil Engineering with selected courses in Bacteriology, Chemical Engineering, and Sanitary Engineering.

As there is a large demand in this State for men familiar with the design and operation of water and sewage plants, special attention will be given to the actual design and practical operation of water purification and sewage disposal plants.

The Sanitary Engineering Laboratory equipment is similar to that used in water and sewage plant laboratories, and the student makes the same tests, using standard methods as are made in water and sewage plant laboratories.

The City of Raleigh water purification plant and the College gymnasium swimming pool filter plant are available for practical demonstration and instruction. Through the coöperation of the Bureau of Sanitary Engineering, State Board of Health, located in Raleigh, the student has a chance to study all phases of its work not only in Sanitary Engineering, but also in the broad field of public health.

Upon graduation, students are prepared to accept positions as water and sewage plant operators, assistant resident engineers with private consulting engineers, junior engineers with state boards of health, and with the United States Public Health Service. After a few years of experience graduates may be expected to advance to positions as superintendents of waterworks, city engineers and city managers, consulting engineers, state sanitary engineers, and senior engineers with the United States Public Health Service.

CURRICULUM IN SANITARY ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

The sophomore year is the same as the sophomore year in Civil Engineering. See page 109. Surveying, C.E. s220, concurrent with Summer School—3 credits.

Junior Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Effective for the academic year 1936-37.			
Elements of Electrical Engineering, I, E.E. 220	3	3	0
Mechanics, C.E. 200	3	0	0
Materials of Construction, C.E. 201	3	0	0
Strength of Materials, C.E. 203	0	3	3
Engineering Drawing, C.E. 208	1	1	1
Hydraulics, C.E. 205	0	3	3
Highway Engineering, H.E. 201	0	3	3
General Bacteriology, Bot. 203	0	4	0
Aquatic Biology, Bot. 210	0	0	2
Sanitary Engineering, C.E. 215	0	0	3
Engineering Geology, Geol. 201	3	0	0
Treatment of Water and Sewage, Chem.E. 208	3	0	0
Technical Writing, Eng. 324	0	0	3
*Electives	3	3	3
	19	20	21

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.			
Reinforced Concrete, C.E., 204	3	0	0
Theory of Structures, C.E. 313	3	3	0
Structural Design, C.E. 314	0	3	3
Graphic Statics, C.E. 209	1	0	0
Materials Testing Laboratory, H.E. 204	0	1	1
Sanitary Engineering Laboratory, C.E. 307	1	1	0
Water Works, C.E. 305	0	3	0
Water Purification, C.E. 310	0	0	3
Sewerage, C.E., 308	3	0	0
Sewage Disposal, C.E. 311	0	3	0
General Economics, Econ. 103	3	3	3
Business Law, Econ. 211	3	0	0
Financing of Sanitary Utilities, C.E. 304	0	0	3
*Electives	3	3	6
	20	20	19

All seniors will be required to go on the inspection trip as part of their curriculum.

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* At least 6 electives must come from Social Science Group.

ELECTRICAL ENGINEERING

The training of young men for active work in a field as wide and diversified as the Electrical Industry demands, above all else, a thorough preparation in the sciences underlying all branches of engineering, a broad foundation in fundamental electrical theory and a clear understanding of the characteristics of electrical machinery and systems. These factors are essential for success, whether it be in the design and manufacture of electrical equipment, in power production and utilization or the fields of communication and signaling. In all these branches of the industry technical advances are being made with increasing rapidity. With this object in view the curriculum in Electrical Engineering includes comprehensive training in mathematics, physics and chemistry, the fundamental sciences, and adequate training in allied branches of engineering. All courses are accompanied by coördinated work in the laboratory and intensive drill in the applications of theory by means of carefully planned problems. In the Senior year the student is offered two options, one looking toward employment in the fields of design, transmission, or communication, and the other in the field of industrial applications.

The curriculum includes a thorough drill in the preparation of technical reports, courses in economics, and opportunity is offered during the junior and senior years for further study of industrial organizations and management.

Each student is also required to spend at least six weeks in satisfactory industrial employment before receiving his degree, and during the senior year to make an inspection trip to a number of modern electric installations, and submit a report upon these.

Close coördination in the work of the American Institute of Electrical Engineers is secured through a student branch at the College, which meets twice a month, through the State section of the Institute, which meets several times during the year, and through the regional meetings of the Institute, one section of which is organized as a student activities conference.

CURRICULUM IN ELECTRICAL ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Surveying, C.E., s102, 3 credits, is required in the summer immediately following the freshman year.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential Calculus, Integral Calculus I and II, Math. 201, 202, 203	4	4	4
Physics for Engineers, Phys. 104	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Economic History, Hist. 101	3	3	3
Metal Work, M.E., 108a	3	0	0
Electrical Engineering Fundamentals, E.E. 101	0	3	3
**Military Science, II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	20	20	20

Junior Year

Effective for the academic year 1936-37.

Mechanics, C.E. 200	3	3	3
Heat Engineering IV, M.E. 204	3	3	3
Mechanical Engineering Laboratory II, M.E. 202	1	1	1
Technical Writing, Eng. 324	0	3	0
Differential Equation, Math. 301	3	0	0
Modern Physics, Phys. 308	0	0	3
General Economics, Econ. 103	3	3	3
Principles of Electrical Engineering, E.E. 201	3	3	3
Electrical Engineering Laboratory, E.E. 203	2	2	2
Electrical Engineering Problems, E.E. 202	1	1	1
Electives	3	3	3
	22	22	22

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.

Engineering Economics, I.E. 213	3	0	0
Hydraulics, C.E. 205	0	3	3
Strength of Materials, C.E. 203	3	0	0
Electrical Industry, I.E. 222	0	3	0
Illumination, E.E. 307	3	3	0
Electric Transmission, E.E. 304	0	0	4
Electric Distribution, E.E. 301	0	0	3
Alternating Current Machinery, E.E. 302	4	4	0
Electrical Engineering Laboratory, E.E. 303	2	2	2
First Option			
Electric Communication, E.E. 306	3	3	3
Second Option			
Electric Power Applications, E.E. 305	3	3	3
Electives	3	3	6
	21	21	21

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed French, M.L. 101. Such students are expected to take two years of French.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

GEOLOGICAL ENGINEERING

This curriculum is designed to give young men the training in geology and engineering that will fit them to meet the practical problems of field geology and mineral deposits.

The mineral resources of the State, both metallic and non-metallic, offer important possibilities for future developments. In the western part of the State there exist valuable deposits of copper, nickel, iron, mica, feldspar, kaolin, cyanite, barite, granite, limestone, and other minerals; in the central part, coal deposits of promising quantity and quality and large areas of pyrophyllite, granite, and other valuable building stones; and in the eastern part, phosphate and marls.

The curriculum in Geological Engineering is designed to meet the geological and mining conditions in North Carolina and the South. There is always a moderate demand for men well trained in geology and engineering in connection with State and Federal geological surveys, oil and mining companies, industrial companies, the leading railways, hydropower companies on dam work, and as teachers of geology. Students will also have the additional advantage of coming in close contact with the research which is being done on the minerals of the State and which of necessity will be greatly enlarged within the next few years.

CURRICULUM IN GEOLOGICAL ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential Calculus, Integral Calculus I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Qualitative Analysis, Chem. 211	4	0	0
Quantitative Analysis, Chem. 212, 213	0	4	4
Physics for Engineers, Phys. 104	4	4	4
Engineering Geology, Geol. 201	3	0	0
Historical Geology, Geol. 125	0	3	0
Ceramic and Mining Processes, Cer.E. 104	0	0	3
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	21

Junior Year

Effective for the academic year 1936-37.

Mechanics, C.E. 200	0	3	3
General Economics, Econ. 103	3	3	3
Mechanical Drawing, M.E. 110	2	2	0
Heat Engineering III, M.E. 201	3	3	0
Mechanical Engineering Laboratory II, M.E. 202	1	1	0
Physical Chemistry, Chem. 231	0	0	5
Mineralogy, Geol. 230, 235	3	3	0
Theoretical Surveying, C.E. 206	3	3	0
Field Surveying, C.E. 207	1	1	0
Topographic Drawing, C.E. 208a	0	1	0
Business Law, Econ. 211	0	0	3
Physiography, Geol. 205	0	0	3
Electives	3	3	3
	19	23	20

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.

Petrology, Geol. 303	3	0	0
Economic Geology, Geol. 305, 306	0	3	3
Optical Mineralogy, Geol. 301	3	3	3
Refractories, Cer.E. 301	0	0	3
Heating and Ventilating, M.E. 303	0	3	0
Mining III, Min.E. 301	3	3	3
Elements of Electrical Engineering I, E.E. 220	3	3	0
Technical Writing, English 324	3	0	0
Hydraulics, C.E. 205	0	0	3
Geological Research, Geol. 320	3	3	3
Electives	3	3	3
	21	21	21

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed French, M.L., 101. These students are expected to take two years of French.

** Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

INDUSTRIAL ENGINEERING

For a number of years there has been increasing application of engineering methods and approach to the solution of the problems of industries, with marked success; thus has developed the technic known as Industrial Engineering, instruction in which is offered in many engineering schools, in order more definitely to prepare young men for this field of activity.

There is an imperative demand in industries for men of trained intelligence and high character, not only well grounded in engineering, but also informed about and directed to industries, where they may serve well because of their combined knowledge of engineering, economics and human relations.

The aim of the curriculum in Industrial Engineering is to prepare students to enter the employ of industries as engineering graduates and, through experience, develop into positions of responsibility and service; and thus to meet the demands of small as well as large industries for men educated as engineers with special preparation for the activities of industries.

Consequently, the curriculum provides thorough education in the subjects fundamental to engineering, basic engineering courses, courses in Psychology, Economics and Accounting, and besides, special Industrial Engineering courses which apply engineering methods and principles to the study of industries; so that students may learn to make engineering, economic and social analyses concurrently, and to apply them to the conduct of enterprises.

Electives, to be selected from engineering and other College courses with the definite approval of the adviser, offer opportunity for the development of individual aptitudes.

CURRICULUM IN INDUSTRIAL ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential and Integral Calculus I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Physics for Engineers, Phys. 104	4	4	4
General Economics, Econ. 103	3	3	3
Woodworking, Foundry, Forge, M.E. 105, 107, 108	2	2	2
Industrial Engineering I, I.E. 101	2	2	2
**Military Science II, Mil. 102	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	21

Junior Year

Effective for the academic year 1936-37.

Mechanics, C.E. 200	3	3	3
Heat Engineering IV, M.E. 204	3	3	3
Mechanical Engineering Laboratory II, M.E. 202	1	1	1
Machine Shop, M.E. 219	1	1	1
Accounting I, Econ. 201	3	3	3
Industrial Engineering II, I.E. 220	3	3	3
Electives	7	7	7
	21	21	21

Summer requirement: six weeks industrial employment.

Senior Year

Effective for the academic year 1937-38.

Technical Writing, Eng. 324	0	3	0
Business Law, Econ. 211	3	0	0
Industrial Psychology, Psychol. 238	0	0	3
Strength of Materials, C.E. 203	3	0	0
Elements of Electrical Engineering II, E.E. 230	4	4	4
Engineering Economics, I.E. 213	3	0	0
Electrical Industry, I.E. 222	0	3	0
Industrial Engineering Problems, I.E. 330	0	3	3
Investigation and Report, I.E. 331	0	0	3
Electives	6	6	6
	19	19	19

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed French M.L. 101. These students are expected to take two years of French.

**Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

MECHANICAL ENGINEERING

The Mechanical Engineer is primarily a designer and builder of machines and other equipment for use in manufacturing processes, transportation, and the generation of power. He is responsible for the conservation and economical use of the power-producing resources of the world, through the application of the proper kind of equipment in each field of production. He is called upon to take charge of the executive management of the manufacturing, transportation, and power industries. For the Mechanical Engineer to be well grounded in his profession he must be thoroughly familiar with both the science and the art of engineering.

The curriculum in Mechanical Engineering begins with a thorough training in mathematics, physics, and chemistry as a foundation for the technical work which is later developed along several parallel lines. The student is taught how these fundamental sciences are applied to the physical properties of the materials of construction, and to the transformation of heat energy into work and power. This is accomplished by means of courses in drafting, metallurgy, mechanics, and thermodynamics; by the work in the wood shop, forge shop, foundry, and machine shop, and by the tests performed in the mechanical laboratory.

An option is offered in the Mechanical Engineering curriculum for students who desire special training in furniture design and construction. It is the purpose of the option to prepare the students for administrative and executive positions in the furniture industry. The option includes the fundamental laws of design through the study of good examples and through the practice in construction. It also includes a study of the characteristics of the different periods, which enables the student to identify an article by its style and to name and understand its different style points. The furniture used in the dormitories and special equipment for the laboratories and offices is manufactured in our woodworking department. This gives a student special advantage in this phase of the work.

CURRICULUM IN MECHANICAL ENGINEERING

Freshman Year

For the freshman year, refer to page 100.

Sophomore Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Differential Calculus, Integral Calculus, I and II, Math. 201, 202, 203	4	4	4
*Business English, Public Speaking, and English or American Literature, Eng. 120, 160 and 220 or 221 or 337	3	3	3
Physics for Engineers, Phys. 104	4	4	4
Mechanical Drawing, M.E. 110	2	2	2
Metallurgy, M.E. 109	2	2	2
Shopwork, M.E. 105, 107, 108	2	2	2
**Military Science, Mil. 102	2	2	2
Physical Education, P.E. 102	1	1	1
	20	20	20

Surveying, C.E. s102, Summer Camp—3 credits.

Junior Year

Effective for the academic year 1936-37.			
General Economics, Econ. 103	3	3	3
Mechanics, C.E. 200	3	3	3
Machine Shop II, M.E. 219	1	1	1
Heat Engineering IV, M.E. 204	3	3	3
Mechanical Engineering Laboratory II, M.E. 202	1	1	1
‡Kinematics, M.E. 203	3	3	3
Materials of Construction, C.E. 201	3	0	0
Strength of Materials, C.E. 203	0	3	3
Electives	3	3	3
	20	20	20

Summer requirement: six weeks industrial employment or ten hours solo flying for Aeronautical Option.

Senior Year

Effective for the academic year 1937-38.			
Power Plants, M.E. 305	3	3	3
Hydraulics, C.E. 205	0	3	3
Heating and Ventilation, M.E. 303	0	3	0
†Machine Design, M.E. 206	3	3	3
†Refrigeration, M.E. 304	0	0	3
Mechanical Engineering Laboratory III, M.E. 301	1	1	1
Elements of Electrical Engineering II, E.E. 230	4	4	4
Business Law, Econ. 211	3	0	0
Technical Writing, Eng. 324	3	0	0
Electives	3	3	3
	20	20	20

All seniors will be required to go on the inspection trip as part of their curriculum.

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* Students who have been certified by the Department of English as proficient in English may substitute for the courses listed French M.L. 101. Such students are expected to take two years of French.

**Or 6 credits in one or two of the following departments: Economics, Psychology, History, Modern Language, Sociology.

‡ Furniture Option, M.E. 205.

† Furniture Option, M.E. 215, or Aero. Option, M.E. 211.

MECHANICAL ENGINEERING II—AERONAUTICAL OPTION

The rapid development in aeronautics has produced a demand for men who are well versed in the subjects pertaining to Aeronautical Engineering. Since Aeronautical Engineering is fundamentally a branch of Mechanical Engineering, the School of Engineering is offering an Aeronautical Option in the Mechanical Engineering curriculum to train men specifically to meet the needs in this field.

The option offered is essentially the Mechanical Engineering curriculum, being identical for the first three years. In the fourth year, however, special emphasis is placed upon the studies pertaining to aircraft engines, airplane design, and aerodynamics. In addition to theoretical instruction, experiments and tests will be made in the laboratory.

A large and well-equipped airport near the campus adds interest and offers an opportunity for practical instruction. In view of the fact that Raleigh is favorably situated on the North-South airplane course, the student will have a wonderful opportunity to inspect the various types of airplanes that make calls at the local airport.

AERONAUTICAL OPTION

Freshman, sophomore, and junior years identical with Mechanical Engineering.

Senior Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Effective for the academic year 1937-38.			
Aircraft Engines, M.E. 310	3	3	3
Airplane Design, M.E. 312	3	3	3
Aerodynamics, M.E. 313	3	3	3
Aeronautical Laboratory, M.E. 311	1	1	1
Elements of Electrical Engineering II, E.E. 230	4	4	4
Business Law, Econ. 211	3	0	0
Hydraulics, C.E. 205	0	3	0
Technical Writing, Eng. 324	0	0	3
Electives	3	3	3
	20	20	20

All seniors will be required to go on the inspection trip as part of their curriculum.

THE ENGINEERING EXPERIMENT STATION

The Engineering Experiment Station of the North Carolina State College of Agriculture and Engineering was established in 1923, as provided by the General Assembly of that year. It is an integral part of the School of Engineering, and is engaged in an organized program of research consisting of individual projects carefully defined and approved, which are carried on by engineering teachers. The Station fits uniquely into the program of instruction, research, and extension of State College.

Purpose

The efforts of the Engineering Experiment Station are directed along the following lines:

(a) The investigation of resources and processes, through experimentation and tests, with the object of opening and developing wider fields for the use of the natural resources of the State.

(b) Coöperation with industrial organizations in the solution of technical problems, which require such facilities and equipment as are available at State College.

(c) The coördination of research work undertaken by the Engineering School.

(d) The publication of the results of experimental and research projects made by the Engineering Experiment Station and the several engineering departments of State College.

THE SCHOOL OF SCIENCE AND BUSINESS

BENJAMIN FRANKLIN BROWN, *Dean*

PURPOSE AND ORGANIZATION OF THE SCHOOL

In the land-grant colleges, of which this institution is one, the classical studies of the older type of college are replaced by work in the sciences and in professional and vocational subjects. A sound basis for technical training includes thorough training in mathematics, physical science, and biological science. It is believed, also, that education should include preparation for more complete living and the discharge of one's duties to the State and to the community in which he lives. The province of the departments grouped in this division of the College is to give this basic, scientific, cultural training; their work is not only foundational, but it permeates through all of the characteristic vocational courses of the institution. The departments of this division thus give unity to all of the four-year curricula offered in the institution.

The curricula in science include the fundamental training in English, mathematics, science, modern languages, history, economics, sociology, education, psychology, military science, and physical training required in the various curricula now offered by the several divisions of the College, and their required subjects constitute an essential part of the institution. By means of a number of groups of majors and minors an opportunity is provided for some students to advance themselves still further in certain fundamental fields. To others the opportunity of a fair degree of specialization is given along with an increased breadth of training. These curricula meet the needs of several types of students, among whom are: (1) Those who have not yet fully decided as to their vocation, but who wish an education that is strong and well balanced in respect to science and other cultural subjects, as a foundation for further education or as a preparation for sound citizenship, and intellectual, æsthetic and ethical satisfaction in life. (2) Those who are fitting themselves for research work in the sciences, especially as applied to agriculture, engineering, textile, and other industrial developments. (3) Those who are looking forward to teaching in the high schools of the State. The electives offered allow one to give special attention to mathematics, physical science, biological science, history, sociology, economics, English, modern languages, and psychology. (4) Those who are interested in the personnel, executive, and research opportunities now demanded in modern industrial pursuits. (5) Those who desire a general education or preparation for the study of a profession.

For the purpose of adjusting the work to the two-fold objectives of basic general education and specialized education, the work of the first two years has been arranged so as to provide basic subject matter. During the first two years students are required to complete a prescribed amount of work selected so as to provide for both breadth and depth. The work of the junior and senior years is more specialized and applied. The general distribution of work during the freshman and sophomore years is shown in the curricula outlined hereafter.

REQUIREMENTS FOR GRADUATION

A minimum of one hundred and ninety-eight (198) term credits and one hundred and ninety-eight (198) points is required for graduation from the School of Science and Business.*

Students entering with advanced standing are required during the remainder of their course to earn at least as many points as the number of term credits remaining necessary for graduation.

The term credits should be distributed as follows: a maximum of sixty (60) term credits in a major department, and a minimum of eighteen (18) term credits in language, twenty (20) term credits in Science, nine (9) term credits in Social Studies, twelve (12) in Military Science or the alternative, and six (6) term credits in Physical Education and Hygiene.

Every regularly enrolled student is required—in accordance with curricular selection—to take not fewer than fourteen (14) nor more than eighteen (18) term credits each term, including the required Physical Education and Hygiene, and the required Military Science or the alternative. Students who have previously demonstrated superior scholarship, by the attainment of a B average during the preceding term, may be permitted to take extra work during the following term.

DEGREES

Upon satisfactory completion of the work in any curriculum of the School, the degree of Bachelor of Science is conferred.

For advanced degrees, see statement of the Graduate School.

CURRICULA

The first year's work is substantially the same for all students in the School of Science and Business. The training is general, which fact gives the student a good opportunity to make a wise choice in his major selection; for he may, if he chooses, change his major group at the beginning of his sophomore year or in some cases even as late as the beginning of his junior year. Any important change made after this may necessitate more than four years for graduation.

NOTE: *Business Administration and General Business Curricula.*

Students who will complete their work in these two curricula at the end of the year 1936-37 should refer to pages 124-126, and 128-129 in the Catalog of North Carolina State College of the University of North Carolina for 1934-1935 for information concerning courses of study prescribed as necessary for graduation.

BIOLOGY

With the increasing demand for scientifically trained men, opportunities for those trained in Biology are greater than ever before. So numer-

* The junior and senior classes for the academic year 1936-37 and the senior class for the academic year 1937-38 will meet the requirements of the catalog of 1934-35. As then indicated students in Industrial Management are required to complete not fewer than two hundred twenty-two (222) term credits and two hundred twenty-two (222) points for graduation.

ous are the special fields within the general field of science of living things that today a great range of choice is open for the student in both the plant and animal studies.

The departments of Botany and Zoology are prepared to lay the necessary foundation to enable the student to start in such professions as those of Biology Teachers in high schools, Instructors in Botany or Zoology in colleges and universities, Technical Specialists in Bacteriology, Genetics, Plant and Animal Physiology, Plant Pathology, Entomology, Economic-Zoology, Ecology, and Plant and Animal Morphology.

Following the completion of the undergraduate work in Biology it is very desirable for the student, as early as possible, to pursue his graduate studies. With this in mind the undergraduate student may major in either Botany or Zoology, having opportunity to take sufficient courses to build a solid foundation for his graduate work. If he so desires he may take an equivalent number of courses in each of the two departments, thus laying a broad foundation in Biology, preparatory to carrying on his advanced studies.

The pre-medical student will find in the Biology curriculum the biological courses necessary for his entrance into a standard medical college. Any student contemplating a medical career should consult the Department of Zoology in regard to the subject matter and arrangement of his course.

[3] CURRICULUM IN BIOLOGY

Freshman Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
Zoology, Botany, and Geology, Zool. 101, Bot. 102, Geol. 101	4	4	4
Chemistry, Chem. 101, 103, 105	4	4	4
Economic History, Hist. 101	3	3	3
Mathematical Analysis, Math. 100	3	3	3
Military Science I, Mil. 101, or Human Relations, Soc. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	20	20	20

Sophomore Year

English or Modern Language	3	3	3
General Physics, Phys. 101	4	4	4
Economics, Econ. 103, or Sociology, Soc. 103, and elective	3	3	3
Botany 101	4	0	0
Zoology 102	0	4	0
Systematic Botany, Bot. 204, or Entomology, Zool. 204	0	0	4
Physiology, Plant, Bot. 209, or Animal, Zool. 201	0	0	5
Elective	3	3	0
Military Science II, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	20	20	22

Junior Year

[1]English or Modern Language	3	3	3
Genetics, Zool. 304	4	0	0
Comparative Anatomy, Zool. 205	0	4	4
Plant Morphology, Bot. 303 and 304	4	0	4
General Bacteriology, Bot. 203	0	4	0
[2]Electives	7	7	7
	18	18	18

Senior Year

Biology	6	6	6
[2]Electives	12	12	12
	18	18	18

[1] French 2 years or German 2 years required.

[2] Nine credits to be chosen from Group II in either the junior or senior year.

NOTE: Group I: Literature and Modern Language. Group II: Social studies. Group III: Mathematics and Natural Sciences.

[3] In 1936-37, students will be admitted to the junior and senior years only.

CHEMISTRY

The curriculum in Chemistry is designed to train students who desire to become analysts, experiment station workers, research chemists, United States Government chemists, State chemists, teachers of Chemistry, or who expect to continue their work for advanced degrees.

Students intending to study medicine may take this curriculum, using the electives to satisfy the biological requirements.

As the curriculum is arranged there is a large proportion of time for electives. This makes it an excellent basis for a cultural course in college work.

[3] CURRICULUM IN CHEMISTRY

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
General Inorganic Chemistry, Chem. 101, 103, 105	4	4	4
Algebra, Trigonometry, and Analytics, Math. 101, 102, 103	6	6	6
Economic History, Hist. 101	3	3	3
Human Relations, Soc. 101, or Military Science I, Mil. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	19	19	19

Sophomore Year

Qual. and Quan. Analysis, Chem. 211 and 212	5	5	5
Physics or Biological Science	4	4	4
General Economics, Econ. 103, or General Sociology, Soc. 103, and elective	3	3	3
[1]English or French or German	3	3	3
Military Science II, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	18	18	18

Junior Year

Organic Chemistry, Chem. 321	4	4	4
Biological Science or Physics	4	4	4
German or French	3	3	3
Mineralogy, Geol. 230	0	0	3
[2]Electives	9	9	6
	20	20	20

Senior Year

Physical Chemistry, Chem. 331	4	4	4
Chemistry elective	6	6	6
[2]Electives	10	10	10
	20	20	20

[1] German or French required for two years.

[2] Nine credits to be chosen from Group II in either the junior or senior year.

Note: Group I: Literature and Modern Language. Group II: Social studies. Group III: Mathematics and Natural Sciences.

[3] In 1936-37, students will be admitted to the junior and senior years only.

INDUSTRIAL CHEMISTRY

This curriculum in Industrial Chemistry is designed for students who prefer the industrial and plant management in the chemical field rather than the more strictly theoretical field.

The students are given a thorough knowledge of analytical, organic, and physical chemistry so that they may understand and do successfully the chemistry required in the study of plants. Courses in Social Studies are given so that the students taking this course have a strong foundation for managerial, executive, and sales positions.

[2] CURRICULUM IN INDUSTRIAL CHEMISTRY

Freshman Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
General Inorganic Chemistry, Chem. 101, 103, 105	4	4	4
Algebra, Trigonometry, and Analytics, Math. 101, 102, 103	6	6	6
Economic History, Hist. 101	3	3	3
Military Science I, Mil. 101, or Human Relations, Soc. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	19	19	19

Sophomore Year

Qualitative and Quantitative Analysis, Chem. 211, 212, 213	5	5	5
Physics or Biological Science	4	4	4
General Economics, Econ. 103	3	3	3
English or Modern Language	3	3	3
Sociology 103 and elective	3	3	3
Military Science II, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	21

Junior Year

Accounting I, Econ. 201	3	3	3
Organic Chemistry, Chem. 321	4	4	4
Biological Science or Physics	4	4	4
Statistical Methods, Econ. 312	0	3	0
Intr. to Psychology, Psychol. 101	0	0	3
Money Credit and Banking, Econ. 221	3	0	0
[1]Electives	6	6	6
	20	20	20

Senior Year

Physical Chemistry, Chem. 331	4	4	4
Business Finance, Econ. 223	0	0	3
Industrial and Personnel Management, Econ. 231	3	3	3
[1]Electives	12	12	9
	19	19	19

[1] Nine credits to be chosen from Group I in either the junior or senior year. NOTE: Group I: Literature and Modern Language. Group II: Social studies. Group III: Mathematics and Natural Sciences.

[2] In 1936-37, students will be admitted to the junior and senior years only.

PHYSICS

There is an ever-increasing demand for men trained in the more theoretical side of engineering and the foundation of the physical sciences. Such men are generally trained as expert physicists. For example, radio experts and men employed in the most exact measurements of electrical, heat and light devices usually prepare themselves by taking undergraduate and graduate courses in Physics. The United States Bureau of Standards, United States Patent Office, United States Geodetic Survey, research laboratories, as well as scores of manufacturing concerns, each year look for trained men. The course in Physics prepares students for these positions. It also is offered for students who wish to teach Physics.

This curriculum also affords a student who is scientifically inclined and yet not decided as to his specific line in science an opportunity to acquire a broad foundation in cultural subjects and a good start in at least two of the physical sciences.

[3]CURRICULUM IN PHYSICS

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
General Physics, Phys. 101	4	4	4
Algebra, Trigonometry, Analytics, Math. 101, 102, 103	6	6	6
Economic History, Hist. 101	3	3	3
Shop Work, M.E. 104	1	1	1
Military Science I, Mil. 101, or Human Relations, Soc. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	20	20	20

Sophomore Year

English	3	3	3
Advanced Physics, Phys. 201	4	4	4
Differential and Integral Calculus, Math. 201 and 202	4	4	4
General Chemistry, Chem. 101, 103, 105	4	4	4
Meterology, Photography, and Descriptive Astronomy, Phys. 209, Phys. 203, Phys. 107	3	3	3
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	21	21	21

Junior Year

Social Science	3	3	3
Biological Science	4	4	0
Earth History, Geol. 101	0	0	5
Heat and Mechanics, Phys. 303 and 301	3	3	3
Adv. Calculus and Dif. Equations, Math. 301 and 303	0	3	3
Physics Elective	3	0	0
Elementary German, M.L. 102	3	3	3
Mechanical Drawing, M.E. 110	2	2	0
Electives	3	3	3
	21	21	20

Senior Year

Electricity and Magnetism, Phys. 302	4	4	0
Light, Phys. 305	0	4	4
German Prose, Elem. Scient. German, M.L. 205 and 207	3	3	3
Research and Physics Elective, Phys. 309	3	0	3
*†Electives	8	7	8
	18	18	18

*Nine credits to be chosen from Group I and Group II.

†Physical Chemistry, 231, 4-4-4, is suggested.

Note: Group I: Literature and Modern Language. Group II: Social studies. Group III: Mathematics and Natural Sciences.

[3] In 1936-37 students will be admitted to the junior and senior years only.

INDUSTRIAL MANAGEMENT

The Industrial Management curriculum is designed to train students for managerial and executive positions in industry, with special emphasis on the production side of manufacturing. Basic preparation is sought in production through engineering subjects, and in departmental and general administration through economic and management subjects. Electives in engineering and social studies give a training in production, business methods, and practices in textile, tobacco, furniture, metal, automotive, ceramic, and other general industries.

The curriculum gives training for the future executive through a progression of basic engineering and social studies. Graduates should expect to gain practical experience and learn industrial techniques by entering the industrial or commercial departments of manufacturing concerns in subordinate positions.

[6] CURRICULUM IN INDUSTRIAL MANAGEMENT

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
[1]Economic History, Hist. 101	3	3	3
[1]Algebra, Trigonometry, and Analytics, Math. 101, 102, 103, or	6	6	6
[2]Mathematical Analysis, Math. 100	3	3	3
General Chemistry, Chem. 101, 103, 105	4	4	4
Engineering Drawing II, M.E. 102	3	3	0
Descriptive Geometry, M.E. 103	0	0	3
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	19	19	19

Sophomore Year

Language or Literature	3	3	3
General Economics, Econ. 103	3	3	3
Accounting I, Econ. 201	3	3	3
[4]Differential and Integral Calculus I and II, Math. 201, 202, 203, or Zoology, Physiology, Psychology, Zool. 101, Zool. 201, Psychol. 101 or an approved elective	4	4	4
Physics 101 or 104	4	4	4
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	20	20	20

Junior Year

Principles of Cost Accounting, Econ. 303	3	3	0
Statistical Methods, Econ. 312	0	3	3
Time Study, Econ. 242	0	0	3
General Sociology, Soc. 103	3	3	0
Industrial Sociology, Soc. 310	0	0	3
Industrial Psychology, Psychol. 238	3	0	0
Business Law, Econ. 211	0	0	3
[5]Heat Engineering III, M.E. 201, or Heat Engineering I, M.E. 112	2–3	2–3	2–0
Mechanical Engineering Lab. I, M.E. 114	1	1	0
[3]Electives	7–6	7–6	5–7
	19	19	19

Senior Year

Industrial Management, Econ. 230	3	3	3
Personnel Management, Econ. 340	0	3	3
Labor Problems, Econ. 239	3	0	0
Marketing Methods and Sales Management, Econ. 216	3	3	3
Elements of Electrical Engineering, I, E.E. 220	3	3	0
Heating and Ventilating, M.E. 303 or M.E.	0	0	3
[3]Electives	7	7	7
	19	19	19

[1] Students taking Math. 6-6-6 will take their History in the sophomore year.

[2] If student takes Math. 100, he will take elective for Calculus, and Physics 101 for 104 during the sophomore year; M.E. 110 for M.E. 201 during the junior year; and E.E. 104 for 102, and M.E. ? (to be arranged) for M.E. 103.

[3] Nine credits to be chosen from Group I and Group II.

Group I: Literature and Modern Language. Group II: Social studies. Group III: Mathematics and Natural Sciences.

Mechanics, C.E. 200 must be taken if Strength of Materials, M.E. 208 is to be elected in the senior year.

Power Plants, M.E. 305, or other equivalent engineering subject is suggested.

[4] If junior and senior electives are to be taken in Mechanical Engineering, Differential and Integral Calculus are required as prerequisites. If junior and senior electives are to be taken in Chemical Engineering, Chemistry 111, 112, and 114 are required as prerequisites. If junior and senior electives are to be taken in Ceramic Engineering, Chemistry 131 is required as prerequisite. If junior and senior electives are to be taken in Textile Chemistry and Dyeing, Chemistry 111, 112, and 114 are required as prerequisites. Calculus is not required if junior and senior electives are to be taken in textiles.

[5] Students with the necessary mathematical prerequisites may substitute the more advanced Heat Engines IV, M.E. 204, which must be accompanied by Mechanical Engineering Laboratory, M.E. 202. Those who have had only Mathematical Analysis or equivalent may substitute Heat Engines I, M.E. 110.

[6] In 1936-37, students will be admitted to the junior and senior years only.

THE TEXTILE SCHOOL

THOMAS NELSON, *Dean and Director of Textile Research*

ORGANIZATION

Instruction in textile work has been given at State College since 1900, at which time the Textile Department was organized. The Board of Trustees at its meeting, June 8, 1925, decided to expand the Textile Department, and the Textile School is now one of the three major divisions of the College.

The Textile Building was enlarged, new equipment added, and other facilities, especially those for research, have been increased in order to serve adequately the textile industry. A complete program of instruction, research, and extension has been developed to meet the great opportunities and needs of the textile industry in the State and in the South.

The Textile School comprises the following divisions: (a) Yarn Manufacture and Knitting, (b) Weaving and Designing, (c) Textile Chemistry and Dyeing, (d) Textile Research. The aim of each division is definite, and the courses and curricula offered make special contribution to the profession.

THE PURPOSE OF THE SCHOOL

The purpose of the Textile School is: (1) to promote the textile interests of the State by giving instruction in the theory and practice of all branches of the textile industry; (2) to coöperate with the textile mills of the State in securing, through scientific research and experimentation, reliable data pertaining to the textile industry; (3) to educate men for professional service in Textile Manufacturing, Textile Management, Yarn Manufacturing, Weaving and Designing, Knitting, Textile Chemistry and Dyeing, and at the same time develop their capacities for intelligent leadership so they may participate in public affairs; (4) to demonstrate the value of economic diversification and to aid in the development of the textile industry through research and experimentation.

North Carolina is the largest textile manufacturing State in the South and has more mills than any other State in America. It has the largest towel, damask, denim and underwear mills in America, and has more mills that dye and finish their own products than any other Southern State. A great diversification of manufactured textile products is being made in cotton, rayon, silk, and worsted.

Never before in the history of America have more opportunities been offered to young men of North Carolina and the South than are available today to graduates of the Textile School.

The courses of instruction are arranged and grouped so that students may get the best results from their work, and accumulate the necessary knowledge, which, together with actual experience after graduation, enables them to fill such positions as:

Owners of mills;

Secretaries and treasurers of mills;

Managers, superintendents, and department foremen in cotton, rayon, silk and hosiery mills;

Superintendents and foremen in mercerizing, bleaching, dyeing and finishing plants;

Designers and analysts of fabrics;

Technical demonstrators in dyestuff industry;

Textile chemists;

Textile cost accountants in mills;

Purchasing agents for mills;

Salesmen of machinery, yarn, cloth, rayon, dyestuffs, and chemicals;

Positions in yarn and fabric commission houses and with fabric converters;

Specialists in government service;

Representatives for manufacturers of machinery, rayon, dyestuffs, and mill supplies.

INSPECTION TRIP

Each student is required to make an inspection trip during his senior year to mills making various classes of fabrics, also to bleaching, finishing, and hosiery plants.

RAYON

Rayon is an important factor in the development of the Southern Textile Industry as it is used extensively in the manufacture of fabrics, hosiery and underwear. It has opened up new fields of creative effort and greatly broadened the scope of textile manufacturing.

The Textile School is cognizant of this development and offers instruction in designing, warp preparation, weaving, dyeing and finishing of rayon fabrics and hosiery.

CURRICULA

The freshman and sophomore work is the same for all students in the Textile School. The training is general, and gives the student a good opportunity to make a wise choice in the selection of the particular field in which he desires to specialize.

TEXTILE CURRICULA FOR UNIVERSITY AND COLLEGE GRADUATES

Selected courses leading to the degree "Bachelor of Science" in Textiles are offered to graduates of universities and standard colleges. These are arranged in accordance with the vocational aim of the individual student and in the light of credits presented from the institution from which the student has been graduated, subject to the approval of his adviser and the director of instruction. In cases where the student presents enough credits which may be used for courses required in his curriculum he may be graduated with a B.S. degree in one year. In no case should it take more than two years to complete the work for his B.S. degree.

SHORT COURSE FOR TEXTILE MILL MEN

Instruction in yarn manufacturing, weaving, designing, fabric analysis and dyeing, lasting two weeks in the second term, is offered for textile mill men who wish to make a short and intensive study of any of these subjects. The subject matter will be selected to suit the requirements of each individual.

DEGREES

Upon the completion of any one of the curricula in Textiles the degree of Bachelor of Science in Textiles is conferred.

The degree of Master of Science in Textiles is offered for the satisfactory completion of one year of graduate study in residence. Candidates for the degree of Master of Science in Textiles enter and are enrolled as graduate students in the Graduate School.

The professional degree of Master of Textiles may be conferred upon graduates of the Textile School after three years of professional practice in charge of important work and upon the acceptance of a satisfactory thesis.

ADMISSION

Each applicant for admission must present evidence that he has satisfactorily completed a four-year curriculum of not less than fifteen units in a secondary school which is approved by the State Department of Education.

Each applicant for admission must be at least sixteen years old and must submit fifteen units of credit from an accredited high school. Of these units 8.5 are in specified subjects and 6.5 in elective subjects.

ADVANCED STANDING

Students who have attended colleges of approved standing will be given credit for work completed there upon the presentation of the proper certificate to the Dean of the Textile School.

REQUIREMENTS FOR GRADUATION

The requirements for graduation in the Textile School are the satisfactory completion of all the courses in one of the prescribed curricula (see tabulations of curricula on the pages following), a total of not less than 234 term credits, and also not less than 234 points calculated under the point system.

Of the minimum of 234 term credits required for graduation in the Textile School 153 are common to all curricula, that is, 12 term credits in Mathematics, 18 in Language, 36 in Economics, History and Psychology, 12 in Chemistry, 15 in Physics, 12 in Engineering, 6 in Agriculture, 24 in Textile, 12 in Military Training (or Social Science alternatives) and 6 in Physical Education.

Each of the curricula permits election of 18 term credits and contains not more than 70 special technical credits.

CURRICULUM IN TEXTILE MANUFACTURING

Freshman Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Composition, Eng. 101	3	3	3
Physics for Textile Students, Phys. 103	4	4	4
Algebra, Trigonometry, Math. 101, 102	6	6	0
Engineering Drawing I, M.E. 101	2	2	2
Shopwork, M.E. 104	1	1	1
Textile Principles, Tex. 101, 115	1	1	4
Human Relations, Soc. 101, or Military Science I, Mil. 101	2	2	2
Fundamental Activities and Hygiene, P.E. 101	1	1	1
	20	20	17

Sophomore Year

Economic History, Hist. 101	3	3	3
Decorative Drawing, A.E. 109, or Light in Industry, Phys. 205	3	0	0
Light in Industry, Phys. 205, or Decorative Drawing, A.E. 109	0	0	3
General Inorganic Chemistry, Chem. 101, 103, 105	4	4	4
Cotton, Cotton Classing II, F.C. 105, 225	3	3	0
Yarn Manufacture I, Tex. 102, 103	1	0	4
Power Weaving, Tex. 107, 108	0	3	1
Fabric Structure & Analysis, Tex. 106	0	2	2
Knitting I, Tex. 104, 105	3	1	1
Military Science II, Mil. 102, or World History, Hist. 104	2	2	2
Sport Activities, P.E. 102	1	1	1
	20	19	21

Junior Year

English or Modern Language	3	3	3
General Economics, Econ. 103	3	3	3
Psychology, Psychol. 101, 238, 269, or Accounting I, Econ. 201	3	3	3
Textile Calculations II, Tex. 316	0	0	3
Yarn Manufacture II, Tex. 201, 202	1	4	1
Dobby Weaving, Tex. 207, 208	1	1	4
Fabric Design and Analysis I, Tex. 205	3	3	0
Dyeing I, Tex. 112, 113	4	1	1
Electives	3	3	3
	21	21	21

Senior Year

Industrial Management, Personnel Management, Econ. 230A, 240	3	3	3
Yarn Manufacture IV, Tex. 301, 302	4	1	1
Cotton & Rayon Design I, Tex. 320, 321, 322	3	3	3
Cotton & Rayon Weaving, Tex. 312, 313	1	1	4
Cotton & Rayon Dyeing I, Tex. 210, 211	1	4	1
Fabric Analysis, Tex. 311	1	1	0
Fabric Testing, Tex. 109	0	0	1
Option		Six Credits	
Electives	3	3	3
	17–20	17–19	17–19

* Select 6 credits from the following:

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
Heat Engineering I, M.E. 112	2	2	2
Elements of Electrical Engineering I, E.E. 220	0	3	3
Marketing Methods, Econ. 215	3	3	3
American Government, Gov. 200	3	3	3
Advertising and Sales Management, Econ. 217, 218	0	3	3
Machine Shop II, M.E. 219	1	1	1
Mill & Mill Village Sanitation, C.E. 214	3	0	0

CURRICULUM IN TEXTILE CHEMISTRY AND DYEING

(The freshman and sophomore years are the same as for Textile Manufacturing.)

Junior Year

COURSES	CREDITS		
	First Term	*Second Term*	*Third Term*
English or German	3	3	3
General Economics, Econ. 103	3	3	3
Psychology, Psychol. 101, 285, 269, or Textile Courses	3	3	3
Qualitative & Quantitative Analysis, Chem. 211, 212, 214	4	4	4
Dyeing II, Tex. 212, 213	5	5	2
Electives	3	3	3
	21	21	18

Senior Year

Industrial Management, Personnel Management, Econ. 230A, 240	3	3	3
Organic Chemistry, Chem. 321	4	4	4
Mill and Mill Village Sanitation, C.E. 214	3	0	0
Chemistry of Colloids, Chem. 335	0	3	0
Textile Microscopy, Tex. 114	1	1	0
Fabric Testing, Tex. 109	0	0	1
Textile Printing, Tex. 214, 215	4	1	1
Cotton & Rayon Dyeing II, Tex. 317, 318	2	5	5
Electives	3	3	3
	20	20	17

CURRICULUM IN TEXTILE MANAGEMENT

(The freshman and sophomore years are the same as for Textile Manufacturing.)

Junior Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
English or Modern Language	3	3	3
Psychology, Psychol. 101, 238, 269	3	3	3
Accounting I, Econ. 201	3	3	3
General Economics, Econ. 103	3	3	3
*Textile Courses	5	5	5
Electives	3	3	3
	20	20	20
* To be selected from:			
Fabric Design & Analysis I, Tex. 205	3	3	0
Yarn Manufacture II, Tex. 201, 202	1	4	1
Dobby Weaving, Tex. 207, 208	1	1	4
Dyeing, Tex. 112, 113	4	1	1
Textile Calculations, Tex. 307 or 316	3	or	3

Senior Year

Industrial Management, Personnel Management, Econ. 230A, 240	3	3	3
Marketing Methods, Econ. 215	3	3	3
Statistical Method, Business Statistics, Econ. 212, 214, or Money, Credit & Banking, Business Finance, Econ. 221, 223	3	3	3
*Textile Courses	7	7	7
Electives	3	3	3
	19	19	19
* To be selected from:			
Yarn Manufacture IV, Tex. 301, 302	4	1	1
Cotton & Rayon Design, Tex. 320, 321, 322	3	3	3
Cotton & Rayon Weaving, Tex. 312, 313	1	1	4
Cotton & Rayon Dyeing, Tex. 210, 211	1	4	1
Fabric Analysis, Fabric Testing, Tex. 311, 109	1	1	1

CURRICULUM IN WEAVING AND DESIGNING

(The freshman and sophomore years are the same as for Textile Manufacturing.)

Junior Year

COURSES	CREDITS *First Term*	*Second Term*	*Third Term*
English or Modern Language	3	3	3
General Economics, Econ. 103	3	3	3
Psychology, Psychol. 101, 269	3	3	0
Appreciation of Fine Arts, A.E. 208, or Textile Courses	3	3	0
Textile Calculations II, Tex. 316	0	0	3
Fabric Design & Analysis, Tex. 205, 206	3	3	3
Dobby Weaving, Tex. 207, 209	2	2	5
Electives	3	3	3
	20	20	20

Senior Year

Industrial Management, Personnel Management, Econ. 230A, 240	3	3	3
Industrial Psychology, Psychol. 238	0	0	3
*Accounting I, Econ. 201	3	3	0
Color in Woven Design, Tex. 315	3	3	0
Cotton & Rayon Design, Tex. 310, 320, 321, 322	4	4	4
Cotton & Rayon Weaving, Tex. 312, 314	2	2	5
Fabric Analysis, Tex. 311	1	1	0
Fabric Testing, Tex. 109	0	0	1
Electives	3	3	3
	19	19	19

* Any optional course in the Textile Manufacturing curriculum may be substituted for this course upon the approval of the Dean and Advisor.

CURRICULUM IN YARN MANUFACTURING

(The freshman and sophomore years are the same as for Textile Manufacturing.)

Junior Year

COURSES	CREDITS		
	First Term	*Second Term*	*Third Term*
English or Modern Language	3	3	3
General Economics, Econ. 103	3	3	3
Machine Shop II, M.E. 219	1	1	1
Accounting I, Econ. 201	3	3	0
Yarn Manufacture III, Tex. 203	0	3	3
Yarn Manufacture Lab. III, Tex. 204	2	2	2
Dobby Weaving, Tex. 207, 208	1	1	4
Dyeing I, Tex. 112, 113	4	1	1
Electives	3	3	3
	20	20	20

Senior Year

Industrial Management, Personnel Management, Econ. 230A, 240	3	3	3
Psychology, Psychol. 101, 238, 269	3	3	3
Principles of Cost Accounting, Econ. 303	3	3	0
Elements of Electrical Engineering I, E.E. 220	0	3	3
Textile Calculations I, Tex. 307	3	0	0
Yarn Manufacturing V, Tex. 303, 304	5	5	2
Manufacturing Problems, Tex. 308	0	0	3
Electives	3	3	3
	20	20	17

TEXTILE RESEARCH

One of the most important developments in connection with the Textile School is the expansion of Textile Research. This will have a decided influence on cotton production as well as cotton manufacturing.

The aims of this research are:

1. A study of the cotton fibre from various sections of the cotton-growing areas of North Carolina and elsewhere, with special emphasis on their affinity for bleaching, dyeing, and mercerization.

2. Testing yarns and fabrics from different cottons to determine shrinkage, standard breaking strength, etc.

3. Testing starches used in sizing, and testing dyes and their properties.

4. Studying the problem of waste, due to selection of imperfect fibre, and improper use of machinery.

5. Testing the uses of the cotton fibre for mechanical as well as domestic uses and extending the research into market demands.

6. Studying designs and methods of finishing goods and the economic advantage to be derived from manufacturing fabrics of higher standards.

7. Studying the cotton mills of North Carolina, their mechanical equipment, and what gradual changes may be effected in order to meet the market demands of the future.

8. Investigating the possible mechanical uses of the cotton fibre, with a view to enlarging the demands for the fibre, thus making it possible to increase cotton production without creating a depressing effect on the producer.

State College has an ideal environment for the Textile School that will be helpful alike to the manufacturer and the cotton farmer. We have the cotton produced at the Experiment Station, and specialists in plant breeding, seed selection, soils, proper use of fertilizers, etc.

Other departments of the College are well equipped to give aid along mechanical and scientific lines.

The Textile Research Department is equipped with a full complement of machinery for yarn manufacturing, and also with the necessary apparatus for testing fibres, yarns, fabrics, analysis of starches and oils, photomicrography, and for other research.

It is, therefore, possible to make a complete study of fibre from the field to the finished fabric.

GRADUATE SCHOOL OF THE UNIVERSITY OF NORTH CAROLINA

WILLIAM WHATLEY PIERSON, JR., *Dean*
Graduate Instruction at N. C. State College

COMMITTEE ON GRADUATE INSTRUCTION

Graduate Instruction in this institution is organized to formulate and develop graduate study and research in the fields primarily of Agriculture, Engineering, and Textile Manufacturing, and in the basic Sciences and the training of teachers related to these subjects. The State of North Carolina holds a place of prestige among the states of the southeast in Agriculture and in Engineering and Manufacturing. The urgent need for graduate instruction and research in these fields is recognized by the workers and especially by the leaders in the occupations which depend upon the development of these branches of knowledge. This institution, therefore, offers training for teachers, investigators, and leaders in Agriculture, Engineering, Education, Manufacturing, and the basic Sciences; and in these pursuits the College aims to maintain sound standards, principles, and ideals.

Unless graduate study and research in the technological and related fields are provided, the institutions of higher learning in this section of the country will look elsewhere for trained men, and there should be a fair balance of such men from every section of the country.

ADMINISTRATION

Subject to the final approval of the Faculty Council, graduate work is directed by a Committee on Graduate Instruction, composed of one faculty member from each School. All subjects to be taken by graduate students are passed upon by the College Committee on Courses of Study. Actual instruction is given by the regular members of the faculty under the supervision of the Director of Instruction, the Head of the Department, or the Dean of the School in which the student is working.

FACILITIES FOR RESEARCH

State College offers exceptional facilities and opportunities for research. The Agricultural Experiment Station of North Carolina, the Engineering Experiment Station, and the Research Laboratories of the Textile School are integral parts of the College. In the Textile School, besides the research carried on by regular members of the staff, the Bureau of Agricultural Economics and other bureaus at Washington have, for some years, used the facilities of the School for special research. Graduate students have the advantages offered by all these agencies in addition to the regular laboratories used for instruction.

In its undeveloped resources and raw materials, as well as in its going concerns in business and industry, in its varied topography and products, North Carolina is a rich field for research. The State is already imbued with a spirit of progress stimulating to intellectual growth.

SCHOLARSHIPS AND FELLOWSHIPS

The College offers annually graduate fellowships and a number of teaching and research fellowships. Besides these, special fellowships are supported by large business organizations.

College Fellowships give tuition and a stipend of $450 an academic year, paid in nine equal installments, a month apart, beginning October 25. The holder of a fellowship may be required to render a maximum of ten hours a week of service to the department in which he is specializing.

Teaching and Research Fellowships give tuition and $500 or more an academic year. The holder of one of these fellowships may not carry more than half a full schedule of graduate studies. The rest of his time must be given to teaching in classroom or laboratory or to research in one of the Experiment Stations.

The Honor Society of Phi Kappa Phi Fellowship. The State College chapter offers $50 annually, preferably to a member of the society, for the purpose of assisting in the promoting of research and advanced training of worthy students.

Special Fellowships have for some years been maintained by business or manufacturing organizations desirous of having research made on certain problems pertaining to their interests. Some organizations maintaining these scholarships have been the National Fertilizer Association, The N. V. Potash Export My., The American Cyanimid Company, The Superphosphate Institute, E. I. DuPont de Nemours Company, The Niagara Sprayer and Chemical Company, and The Eli Lilly and Company. The stipends afforded by these fellowships have varied from $720 to $1,500 for twelve months. It is hoped that some of these may be available for the year 1936-37.

REQUIREMENTS FOR ADMISSION AND DEGREES

Degrees

The College grants degrees for work done in residence and for work done during the practice of a profession, as follows:

Degrees In Residence

Master of Science in Agriculture
Master of Science in Engineering
Master of Science in Education
Master of Science in Textiles
Master of Science (pure, not applied)

Professional Degrees

Master of Agriculture
Master of Textiles
Civil Engineer
Chemical Engineer
Ceramic Engineer
Electrical Engineer
Mechanical Engineer

DEGREES IN RESIDENCE

Admission

1. A candidate for admission to graduate study must present an authorized transcript of his collegiate record as evidence that the candidate holds a bachelor's degree for a four years' undergraduate course from a college whose standards are equivalent to those of State College.

2. Admission to courses of graduate work does not necessarily mean that a student may immediately become a candidate for an advanced degree. If the student is not prepared to do graduate work at once he may pursue undergraduate courses which will best fit him for advanced work.

3. A member of the senior class of State College may, upon the approval of the Committee on Graduate Instruction, register for graduate courses to fill a roster of studies not to exceed eighteen credits for any term.

Credits*

1. For all master of science degrees, forty-five term credits are required, a credit being given for an hour of class work successfully completed through a term. Besides the term credits, for all master of science degrees a thesis must be written and approved.

2. Not more than fifteen of the academic credits required for a graduate degree will be accepted from other institutions.

3. No graduate credit will be allowed for excess undergraduate credit from any other institution unless the institution is giving graduate work, conferring graduate degrees, and certifies that the credit offered is of graduate grade.

Courses of Study**

As designated in the College Catalog under Description of Courses, the courses numbered 400 to 499 are for graduate students only and those numbered 300 to 399 are for graduate and advanced undergraduates.

The program of the student shall contain at least twelve credits in courses of the 400 group. Nine credits in this group may be obtained in approved research courses. A maximum of 33 credits, upon which a minimum grade of C must be made, may be gained in the 300 group.

The student's program of studies, made under the supervision of the student's adviser, must be approved by the Dean of the School in which the student is specializing and finally by the Committee on Graduate Instruction.

Language Requirements

A reading knowledge of at least one modern foreign language is required for candidates for the Master's degree. The knowledge will be tested by a special examination by the language department.

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* The above statements on term credits and residence are in force for all graduate students after Commencement, June, 1932, except that students who have partly fulfilled the requirements before this date will have their work pro-rated between the past and the present standards according to the amount already completed.

** Due to changes now being considered in graduate instruction certain courses previously accepted for graduate credit may not be allowed in the future.

Thesis

A graduate student, candidate for the Master's degree, must prepare under the supervision of the student's adviser a thesis upon a subject, approved by the adviser, in the field of the student's special work. Two copies, the original and the first carbon, of the completed thesis must be presented to the Committee on Graduate Instruction at least one month before the degree is awarded.

Residence*

A candidate for a degree of Master of Science is required to be in residence at the College, pursuing graduate work, one full academic year of three terms. The candidate is not permitted to take course leading to the forty-five credits in a shorter time.

Six summer schools of six weeks in residence at the College are reckoned sufficient to fulfill the residence requirement. By specific approval of the Committee on Graduate Instruction, one summer period may be spent away from the College if devoted to the preparation of the thesis required for graduation.

In special cases it is possible for graduate students to do twelve weeks work during a summer session, provided instructors will remain at the College throughout the summer. Under these provisions a minimum of four summer sessions, two of twelve weeks and two of six weeks, are required for residence.

Class Work and Examinations

As a mature student admitted to graduate study only after ability and earnestness are established, the graduate student is expected to assume greater individual responsibility, and since specializing, to work in a more comprehensive manner than the undergraduate. However, in preparation, in attendance, and in all the routine of class work, the graduate student is subject to the regulations observed in other divisions of the College.

Besides the examinations in class, the graduate student, at least two weeks prior to graduation, has a general examination on his work.

PROFESSIONAL DEGREES

Significance of Professional Degrees

The professional degrees are not honorary; they are tests of ability and testimonials of accomplishment. To merit the professional degree, a candidate must, in his thesis, demonstrate his ability to attack and to solve a new problem of sufficient complexity to require distinctly original processes of thought, and the solution of which shall make, however small, yet a real contribution to his profession. The record of his work must demonstrate his power to conceive, to plan, to organize, to carry through to completion a project of considerable magnitude. The candi-

* The above statements on term credits and residence are in force for all graduate students after Commencement, June, 1932, except that students who have partly fulfilled the requirements before this date will have their work pro-rated between the past and the present standards according to the amount already completed.

date should quite obviously have grown professionally since his graduation and evince intellectual vitality to guarantee the continuance of his growth.

The conditions for awarding the degrees are as follows:

Requirements for Professional Degrees

1. A professional degree may be conferred upon a graduate of State College in the School in which the candidate received the Bachelor's degree; besides, the degree of Master of Agriculture may be conferred upon graduates of other institutions who have performed outstanding professional service in agriculture for the State of North Carolina for a continuous period of not less than five years.

2. The degree of Master of Agriculture may be conferred upon graduates after five years of service in agriculture and upon the acceptance of a thesis.

The degree in engineering or in textiles may be conferred upon graduates of State College after three years' professional practice in responsible charge of important work, and upon the acceptance of a thesis on a subject related to the practice in which the applicant has been engaged.

3. Application for the degree must be presented to the Committee on Graduate Instruction not less than nine months before the degree may be conferred.

4. With the application (for a degree) the candidate must present, as preliminary basis for the degree, (1) the subject of a thesis he purposes to write, and (2) a statement in outline of his professional work since graduation, both of which must be approved by the committee.

5. The completed thesis must be submitted, on or before May 1, to the committee for consideration, and with it a detailed statement, duly certified, of the candidate's professional work since graduation, upon which, in addition to the thesis, the degree is to be awarded.

6. Upon notification that thesis and work have been approved by the committee as worthy basis for the degree, the candidate shall, upon a specified date, appear before the committee for oral or written examination on his work and his thesis.

Correspondence about graduate work preferably should be addressed to the Dean of the School concerned.

COLLEGE EXTENSION DIVISION

EDWARD W. RUGGLES, *Director*

PURPOSE

The North Carolina State College of Agriculture and Engineering offers technical education in Agriculture, Engineering. Science and Business to all properly qualified students who come within its walls. There are many persons in North Carolina, however, who for various reasons cannot attend classes on the campus, although they have a desire and a need for the type of training which is offered by this institution. Therefore, the College offers correspondence courses, lecture courses and extension class instruction to the citizens of the State in the fields of Agriculture, Engineering, Science and Business.

FOR WHOM INTENDED

The College Extension Division offers courses similar to those given on the campus to any one who desires to take such courses and who is qualified to do the work. The courses offered, although making a general appeal, will be particularly helpful for the following classes of persons:

1. College students who are unable to pursue continued resident study.

2. Rural grade and high school teachers who cannot avail themselves of resident instruction.

3. Teachers and others who have partially completed work for a college degree and who desire to pursue work along some special line, or who desire further training to better equip themselves for their vocations.

4. Professional and business men who wish to supplement their training with technical information.

5. Farmers, county agents, and others who desire additional information and training in any phase of agricultural work.

6. Practical men engaged in the various industries who want to become more efficient in their occupations.

CREDITS

For admission to courses for college credit, the student must meet the regular College entrance requirements, and file a transcript of his previous school record. Persons of mature age, however, who are qualified to do the work may be admitted without meeting the regular entrance requirements. The ability of the student to enter upon the work of any individual course is passed upon by the instructor in charge of the course. Not more than fifty term credits may be earned by correspondence, and not more than sixty by correspondence and extension. Not more than six credits and (or) eighteen points may be earned toward graduation after a student's last residence at this institution. Extension work cannot be taken while a student is in residence without special permission.

Collegiate credit for courses completed by correspondence shall conform as nearly as possible to the same regulations that govern resident

work. Correspondence courses are based upon the unit course, which is divided when practicable into sixteen assignments, representing a three-credit course for one term in residence. Variations from the unit course are indicated by the number of credits, or by the number of assignments or class meetings when College credit is not given. No student will be allowed to take more than two courses by correspondence at one time, and it is recommended that one course be completed before beginning another.

A correspondence course must be completed within one year, unless further time is granted by the Director of Extension, in which case a renewal fee will be required.

No correspondence course may be completed in less than one month from date of registration.

Those who wish credit for correspondence work must take a final examination upon the completion of all assignments in a course. This examination may be taken at the College or at home under conditions approved by the College authorities.

Before receiving credit for any correspondence course all corrected assignments must be returned to the College Extension Division.

The Division of Certification of the State Department of Public Instruction will credit toward State teachers' certificates courses completed by correspondence or extension classes for which the College gives credit toward a degree, but not to exceed twelve term credits in any one school year if the teacher is regularly employed. It is possible, therefore, for teachers to earn both certification and degree credits at the same time.

FEES

For courses involving five term hours of credit a fee of $12 is charged, and a proportionate fee is charged for courses of less than five credit hours, based on a fee of $2.50 per term hour credit. No fees can be refunded after a course is once begun. The registration fee holds good for twelve months only, unless further time is granted by the Director of Extension.

COURSES

Any person who desires to obtain College credit by means of extension classes or by correspondence courses should write to the College Extension Division, requesting one of the extension bulletins which contains complete information concerning methods of instruction, fees, and the conditions upon which College credit will be granted. In all cases where College credit is desired a final examination must be taken by the student, either at State College or under the supervision of some one in the community designated by the College. The examination given will be parallel with that given for the same course at the College.

The courses for correspondence study and extension classes are listed below:

Agricultural Economics 261, 268*, 302*; *Animal Husbandry* 102*, *Architectural Engineering* 107, 206*, 209; *Botany Ex.* 199; *Ceramic Engineering* 103-A*, 208*, 208-C*, 210-A*, 213*, 301*, 214*; *Chemical Engineering* 201*; *Chemistry Ex.* 199, 240, 341, 344; *Economics* 103, 102*, 211*; *Education* 101, 203*, 208, 269, s303, 320*, 321*, 322, 327, 330, 331. s337, 340, Ex. 342, 342, Ex. s352*, Ex. s354, s354, 368, 370, 371*, Ex. 375*, 376, 377; *English* 101, 120*, 130, 150*, 160, s202, 220, 221, 223, 226, 227, 235, 236. 238, 251, 253, Ex. 261, 269, 319, 320, 330, 332, 333, 334, 335, 336, 337, 364; *Field Crops* 101*; *Geology* 101, 120*, 125, 205, 207, 230, 280, s291; *History* 101*, 104, 201*, 209*, 212, 301, 302*, 303*, 307*, 310, 315; Ex. 320, Ex. 321, Ex. 322; *Horticulture* 101, 209*, 228*; *Mathematics* 100, 101, 102, 103, 201, 202. 203; *Mechanical Engineering* 101*, 102*; *Modern Language* 101*, 102, 103*, 104, 105, 106*, 107, 208, 209, 310, 311, 312, 313, 314, 315, Ex. 316, Ex. 317; *Physics Ex.* 199, 312; *Poultry* 101*, 303*, 305*; *Sociology* 101*, 102, 103*, 300*, 301*, Ex. 302*, 305, Ex. 306*, 307, 308, 310*, 312; *Soils* 110, Ex. 120, Ex. 215, Ex. 220, 270*, 310*, 315, 320*; *Zoology* Ex. 199, Ex. 107, Ex. 108, Ex. 220, 208.

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* Courses available by correspondence.

Practical Courses—Industrial Electricity*, Practical Engineering Drawing*, Practical Land Surveying*, Practical Mathematics*, Plumbing*, Electrical Meters*.

NOTE: A Correspondence Course Catalog giving full details and descriptions of these courses may be obtained from The College Extension Division.

1936 SUMMER SESSIONS

of the

CONSOLIDATED UNIVERSITY OF NORTH CAROLINA

First Term: All three units.
Second Term: Chapel Hill only.

The Summer Sessions of the three units of The University of North Carolina will be operated as integral parts of the Institution, and will be administered by the regular administrative officers of the University, just as other phases of University activity, with the exception that Dr. E. W. Knight of Chapel Hill has been elected Director of the Summer Schools. The Deans of Administration at Chapel Hill, Greensboro, and Raleigh, together with their regular administrative Council, will have charge of the activities upon the campuses. Each unit will endeavor to use its faculty and physical equipment to the fullest extent toward the realization of the educational goals of the State.

The State College Summer Session—June 10-July 21, 1936

The distinctive work of the State College unit of the Summer Session will be to serve the people of North Carolina who are interested in technical education. However, the Summer Session will continue to provide courses for its own students in practically all fields of study offered during the regular session, thus providing opportunities for students to remove conditions, or to take special courses which will enrich their college education.

Special courses for teachers in industrial arts and guidance and character education will be provided.

Fees and Expenses for Six Weeks Period

All fees and other charges are payable in advance or upon registration, and all checks should be payable to North Carolina State College.

Room Rent (per person)	$ 7.50
Board at College Cafeteria (Estimate)	30.00

All students occupying a room alone will be charged $10.00.

College Fees

Registration fee	$ 3.00
Course fee (each quarter hour credit)	3.00

For Summer Session Catalogue and additional information write Office of Registration, N. C. State College, Raleigh, N. C.

DESCRIPTION OF COURSES

AGRICULTURAL ECONOMICS

Courses for Advanced Undergraduates

Agr. Econ. 260. Agricultural Economics. 0-0-3

Required of sophomores in Agriculture. Prerequisite: Econ. 102 or 103.

A study of the economics of agricultural production; the marketing of farm products, farm credit, land tenure and social economic conditions of the farmer. Mr. Clement, Mr. Forster.

Agr. Econ. 261. Farm Management I. 0-0-3

Required of juniors in Agricultural Economics, Agriculture and Vocational Education. Prerequisite: Econ. 102 or 103.

The principles involved in the successful operation of the farm, farm planning, management of labor, farm work programs, use of machinery, and farm administration. Mr. Forster.

Agr. Econ. 262. Farm Accounting. 0-0-3

Required of juniors in Vocational Agriculture. Prerequisite: Econ. 102.

The practical aspects of farm accounting, preparation of inventories of farm property, simple financial statements, method of keeping farm records, analysis and the interpretation of results obtained from farm business transactions. Mr. Forster.

Agr. Econ. 263. Farm Cost Accounting. 0-0-3

Required of juniors in Agricultural Economics. Prerequisite: Econ. 102 or 103, and 201.

The principles of accounting applied to farm transactions, the preparation of financial statements, the methods of keeping farm records, analysis of an individual farm record, and the interpretation of cost accounting results. Mr. Forster.

Agr. Econ. 265. Agricultural Marketing. 3-0-0

Required of seniors in Agricultural Economics, Agriculture, and Vocational Education. Prerequisite: Econ. 102 or 103.

The economic principles underlying successful marketing of farm products, market organization and control, price-making forces and critical examination of the present system of marketing farm products.

Mr. Smith.

Agr. Econ. 268. Grades, Standards, and Inspection. 0-3-0

Required of seniors in Agricultural Economics. Prerequisite: Econ. 102 or 103.

History of the grades and standards of important agricultural products, together with the technic of inspection. Mr. .....

Courses for Graduates and Advanced Undergraduates

Agr. Econ. 362. Farm Management II. 0-0-3

Required of seniors in Agricultural Economics. Prerequisite: Agr. Econ. 261.

The application of farm management principles to the management and organization of farms in typical regions of the State. Mr. Forster.

Agr. Econ. 363. Agricultural Coöperation. 0-3-0

Required of seniors in Agricultural Economics. Prerequisite: Econ. 102 or 103.

Specific consideration is given to local community coöperation, both economic and social, farmers' buying, selling, and service organizations. Mr. Clement.

Agr. Econ. 364. Land Economics. 0-0-3

Elective. Prerequisite: Econ. 103, Agr. Econ. 260, and 6 additional term credits in Economics.

The economic problems connected with the ownership and acquisition of land, tenancy and land ownership, the functions of the landlord and the tenant, land valuation and land speculation. Mr. Forster.

Agr. Econ. 366. Marketing Methods and Problems. 3-0-0

Required of seniors in Agricultural Economics.

Prerequisite: Econ. 103, Agr. Econ. 260, and 6 additional term credits in Economics.

A careful study of the problems and methods involved in the marketing of farm products. Suggestions for improvement will be stressed. Mr. Smith.

Agr. Econ. 367. Agricultural Finance. 0-3-0

Elective. Prerequisite: Econ. 102, Agr. Econ. 260, and 6 additional term credits in Economics.

Principles involved in financing the production and marketing of agricultural products. Consideration of farm mortgage credit, personal and intermediate credit, and agricultural taxation. Mr. Forster.

Agr. Econ. 368. Cotton and Tobacco Marketing. 3-0-0 or 0-3-0

Required of seniors in Agricultural Economics. Prerequisite: Econ. 102, Agr. Econ. 260, Agr. Econ. 265, and 3 additional credits in Economics.

Problems arising in connection with the marketing of cotton and tobacco. Particular attention to the marketing machinery.

Mr. Forster and Mr. Smith.

Courses for Graduates Only

Agr. Econ. 403. Economics of Agricultural Production. 3-0-0

Prerequisite: Econ. 103, Agr. Econ. 260, and 6 additional term credits in Economics.

Economic theories applicable to agricultural production. The nature and characteristics of the factors of production, the law of variable proportion, the law of diminishing return, and the theory of least cost.

Mr. Forster.

Agr. Econ. 404. Farm Organization and Management. 0-3-0

Prerequisite: Econ. 102, Agr. Econ. 261, 362, and 9 additional term credits in Economics.

Review and application of economic principles discussed in Course 362.

Mr. Forster.

Agr. Econ. 405. Agricultural Finance and Taxation. 0-0-3

Prerequisite: Econ. 103, Agr. Econ. 367, and 6 additional term credits in Economics.

Problems in financing agricultural production and marketing, and methods of taxation as they affect agriculture. Recent legislation is emphasized. Mr. Clement.

Agr. Econ. 406. Coöperative Marketing Methods and Practices. 0-0-3

Prerequisite: Econ. 103, Agr. Econ. 265, and 6 additional term credits in Economics.

A critical study of the methods and practices used by large agricultural coöperatives. Mr. Clement.

Agr. Econ. 407. Research Method and Procedure in Agricultural Economics and Rural Sociology. 2-2-2

Prerequisite: Economics 103, 312, and 6 additional term credits in Economics.

To introduce to the students the research method and procedure now being employed by research workers in the field of Agricultural Economics, including qualitative, quantitative, inductive, and deductive methods and research procedure, choice of projects, planning, and execution of the research project. Mr. Hamilton.

Agr. Econ. 408. National Economic Policies Affecting Agriculture. 0-3-0

Prerequisite: Econ. 103, Agr. Econ. 260, Agr. Econ. 265.

A critical analysis of the various farm relief proposals with special reference to those made to control production, assist in the marketing of farm products and to supply farmers with various kinds of credit.

Mr. Forster.

AGRICULTURAL ECONOMICS—RURAL SOCIOLOGY

Courses for Graduates and Advanced Undergraduates

Rural Soc. 302. Rural Sociology. 0-3-0 or 0-0-3

Prerequisites: Soc. 103 or Econ. 103. Required of juniors in Rural Sociology, seniors in Agricultural Economics, and juniors in certain Education curricula.

The culture, social organization, and social problems of rural people with special reference to Southern rural life and proposed programs of development. Mr. Hamilton.

Rural Soc. 303. Farmers' Movements. 0-0-3

Prerequisite: Rural Soc. 302. Required of seniors in Agricultural Economics and Rural Sociology.

The origin, growth, and the present status of such national farmers' organizations and movements as: the Grange, the Farmers' Alliance, the Populist Revolt, the Agricultural Wheel, the Farmers' Union, the Society of the Equity, the Non-Partisan League, the Farm Bureau, the Farm-Labor Union, and the Coöperative Marketing Movement.

Mr. Hamilton.

Rural Soc. 304. Rural Social Traits and Attitudes. 0-3-0

Prerequisite: Rural Soc. 302. Required of seniors in Rural Sociology.

The characteristic social traits and attitudes of rural people in relation to rural social organizations and rural institutions. Mr. Hamilton.

Rural Soc. 305. Community Organization. 0-0-3

Prerequisite: Rural Soc. 302. Required of seniors in Rural Sociology and in Agricultural Teaching.

Community organization in North Carolina and other states. Community structure and size, community institutions and service agencies, community disorganization, methods of community organization, leadership and the relation of community organization to state and national agencies. Mr. Hamilton.

Rur. Soc. 309. Analysis of Social Data. 0-0-3

Prerequisite: 6 credits in Econ. 312.

The application of logic and modern statistical methods to the study of rural social problems. Mr. Hamilton.

Courses for Graduates Only

Rural Soc. 410. Advanced Rural Sociology. 0-3-3

Prerequisites: Rural Sociology 302, and 6 additional term credits in either Rural Sociology or Agricultural Economics.

Historical forms of rural society; differentiation and mobility of farmer and peasant classes; bodily, vital, mental, and moral characteristics of

rural as compared with urban groups; relation of farm people to other social groups; standards and planes of living; rural institutions and culture; national agrarian policy; and a critical review of current research in rural sociology. Mr. Hamilton.

Rural Soc. 412. Research in Agricultural Economics and Rural Sociology. 3-3-3

Research problems in agricultural production, marketing, finance, taxation, population, community organization, family life, standards of living and social attitudes. Staff.

AGRICULTURAL ENGINEERING

Courses for Undergraduates

Agr. Eng. 130. Farm Equipment. 3-0-0 or 0-3-0

Required of sophomores in Agriculture.

A study of modern mechanical equipment for the farm. Mr. Weaver.

Agr. Eng. 135. Terracing and Drainage. 0-0-3

Required of juniors in General Agriculture.

A study of the different methods of disposing of surplus water and the prevention of erosion. Mr. Weaver.

Agr. Eng. 145. Farm Buildings. 0-0-3

Required of seniors in General Agriculture. Elective for all juniors and seniors.

A study of the design, construction, and materials used in modern farm buildings. Mr. Weaver.

Agr. Eng. 147. Farm Conveniences. 0-3-0

Required of seniors in General Agriculture. Elective for all juniors and seniors.

A study of farm water supply systems, electric lighting plants, heating and sewage disposal systems as regards installation, adjustment, and repair. Mr. Weaver.

Agr. Eng. 155. Farm Engines. 0-3-0

Elective for all juniors and seniors.

The principle of farm gas engine operation, its application to single and multiple cylinder engines, and the repair and adjustment of engines. Mr. Weaver.

Courses for Advanced Undergraduates

Agr. Eng. 217. Teaching of Farm Shop Work. 3-3-0

Required of juniors in Agricultural Education.

This course is designed for men intending to teach Vocational Agriculture in the high schools of this State. Methods of presenting the subject matter to students as well as the manipulation of woodworking, forging, soldering, pipe fitting, and harness repairing tools. Mr. Weaver.

Agr. Eng. 250. Farm Machinery and Tractors. 0-3-0

Prerequisite: Agr. Eng. 155. Elective for juniors and seniors.

A study of the design, construction and operation of modern labor-saving machinery. Mr. Weaver.

Courses for Graduates and Advanced Undergraduates

Agr. Eng. 335. Special Problems in Agricultural Engineering. 3-3-3

Prerequisite: Agr. Eng. 130, 135, 145, and 155.

This course is designed to meet the needs of students who desire advanced work in one of the following branches of Agricultural Engineering: Gas Engines, Tractors, Lighting Plants, Farm Machinery, and Drainage. Mr. Weaver.

Agr. Eng. 350. Senior Seminar. 1-1-1

Prerequisite: Senior standing in Agricultural Engineering. Elective for seniors.

Students will be assigned special problems the results of which are to be presented to the class. Mr. Weaver.

Agr. Eng. 360. Erosion Prevention. 0-0-3

Prerequisite: Agr. Eng. 130, 135, and Soils 115. Elective for seniors.

The purpose of this course is to go into the causes, effects, and methods of conserving our greatest national resource—our fertile soil. Mr. Weaver.

Agr. Eng. 365. Farm Structures. 0-3-0 or 0-0-3

Prerequisite: Agr. Eng. 130, 145, and A. H. 101. Elective for seniors.

An advanced study of modern building methods as applied to farm structures. The use of labor-saving barn equipment and methods of reducing labor to minimum is stressed. The placing of the farm group in relation to topography and farm activities, from the standpoint of economy, appearance, and utility, is an important phase of the course.

Agr. Eng. 370. Rural Electrification. 0-3-0

Required of seniors in Agricultural Engineering.

A study of problems involved in the distribution, uses and costs of electricity on the farm. Mr. Weaver.

ANIMAL HUSBANDRY

Courses for Undergraduates

A. H. 101. Animal Nutrition I. 0-3-0

Required of sophomores in Agriculture.

Prerequisite: Chem. 101.

A study of animal nutrition; composition of animal body; digestion; nutrients; feeding standards; calculating rations. Staff.

Courses for Advanced Undergraduates

A. H. 201. Swine Production. 3-0-0

Elective for juniors and seniors.

A study of adaptability of swine, with emphasis on feeding, judging, and management. Mr. Hostetler.

A. H. 202. Animal Breeding. 4-0-0

Elective for juniors and seniors.

A study of breeding and improvement of our domestic animals; a first-hand study of successful breeding establishments and their problems. Mr. Ruffner.

A. H. 203. Advanced Stock Judging. 0-0-3

Elective for juniors and seniors.

A study of market and show-ring requirements in the selection of horses and mules, beef cattle, dairy cattle, sheep, and swine. Breed characteristics of these animals are studied in detail, and practice judging brings out the relationship of form to function in livestock production. Mr. Haig.

A. H. 204. Dairy Cattle and Milk Production. 3-0-0

Elective for juniors and seniors.

A study of management of dairy cattle for economical milk production, including dairy breed characteristics, adaption, selection, management, feeding, calf raising and dairy barn equipment. Mr. Nance.

A. H. 205. Sheep Production. 0-0-3

Elective for juniors and seniors.

A study of the establishment, care, and management of the farm flock. Mr. Nance.

A. H. 206. Farm Meats I. 3-0-0 or 0-3-0

Elective for juniors and seniors.

A study of the composition and value of meat, with practice work in slaughtering and cutting. Mr. Nance.

A. H. 207. Farm Meats II. 0-3-0

Elective for juniors and seniors. Prerequisite: A. H. 206.

Special study and practice in making retail cuts and in curing pork, beef, and lamb. Mr. Nance.

A. H. 208. Dairying. 3-0-0 or 0-3-0

Required of juniors in Animal Husbandry.

Elective for students in Agriculture.

Fundamentals of dairy herd management in the production of milk and cream on the farm. The use of the Babcock Tests, buttermaking on the farm, operation of cream separators, constitute the laboratory work. Mr. Haig.

A. H. 209. Horse and Mule Production. 3-0-0

Elective for juniors and seniors.

A study of practical methods in production and management of horses and mules for work on farms under southern conditions. Special study of use of home-grown feeds for horses and mules at work or idle.

Mr. Haig.

A. H. 210. History of Breeds. 0-3-3

Required of juniors in A.H. Elective for students in Agriculture.

A study of types, characteristics, and history of the leading strains and families of the different breeds of animals. Mr. Ruffner, Mr. Haig.

A. H. 211. Animal Nutrition II. 0-0-3

Required of juniors in Animal Husbandry.

Prerequisite: A. H. 101.

A study of all feeding stuffs used in America; laws controlling feeding stuffs; preparation of feeds; home mixed and commercial feeds.

Mr. Ruffner, Mr. Haig.

A. H. 212. Creamery Buttermaking. 4-0-0

This course deals with the principles and practices of factory buttermaking, from the care of the cream on the farm through the different processes until ready for marketing. Mr. Clevenger.

A. H. 213. Testing of Milk Products. 0-4-0

Elective for juniors and seniors.

Lectures and laboratory practice on the testing of milk and milk products for butterfat, acidity, adulteration, preservatives, sediment, etc., that are ordinarily used by dairy manufacturing plants or in milk inspection work. Mr. Clevenger.

A. H. 214. Cheesemaking. 0-0-3

Elective for juniors and seniors.

Lectures and laboratory practice in the making of various soft and hard cheeses usually made on a farm or in a cheese factory.

Mr. Clevenger.

A. H. 215. Dairy Manufacture Practice. 0-3-0

Elective for juniors and seniors.

Lectures and laboratory practice on the business and factory management methods used in dairy plants. Mr. Clevenger.

A. H. 216. City Milk Supply. 0-0-4

Elective for juniors and seniors.

Lectures and laboratory practice; the phases of the city milk supply from the standpoint of the Milk Inspector and Board of Health; the methods and processes used in a central pasteurizing milk distribution plant and the dairymen supplying milk to same; the raw retail milk distributor and his problems. Mr. Clevenger.

A. H. 217. Ice Cream Making. 4-0-0

Elective for juniors and seniors.

Standardizing of mixing and freezing of ice cream, sherbets, and other frozen products, and the physical principles involved; types of freezers, flavoring materials, fillers and binders; ice cream standards. The theory and practice of refrigeration and its use in the ice cream plant.

Mr. Clevenger.

A. H. 218. Comparative Anatomy and Physiology of Domestic Animals. 3-0-0

Prerequisite: Zool. 102.

A course dealing with the structure and functions of the animal body. Laboratory, lectures, and recitations. Mr. Grinnells.

A. H. 219. Common Diseases. 0-3-0

Prerequisite: A. H. 218.

A study of contagious, non-contagious, and parasitic diseases of farm animals. Laboratory, lectures, recitations. Mr. Grinnells.

A. H. 220. Senior Seminar. 1-1-1

Required of seniors in A. H.

Prerequisite: A. H. 101.

A discussion of livestock problems by extension and research workers, together with special assignments to students with regard to various phases of the industry. Animal Husbandry Staff.

A. H. 221. Animal Hygiene and Sanitation. 0-0-3

Prerequisite: A. H. 219, Bot. 203.

Animal health and prevention of disease as affected by environment. Lectures, reference reading, recitations. Mr. Grinnells.

A. H. 222. Dairy Machinery. 0-1-0

Elective for juniors and seniors.

Lecture and demonstration on the installation, kind, care, and handling of dairy plant equipment, including the refrigerating unit, pipe fitting, soldering, etc. Mr. Clevenger.

A. H. 223. Dairy Products Judging. 0-0-1

Elective for juniors and seniors.

A course of training for students in judging all dairy products according to official standards and commercial grades. Mr. Clevenger.

A. H. 224. Beef Cattle Production. 0-3-0

Elective for juniors and seniors.

A study of the feeding, care, and adaption of beef cattle to North Carolina conditions. Mr. Foster.

Courses for Graduates and Advanced Undergraduates

A. H. 301. Dairy Manufactures. 3-3-3

Prerequisite: A. H. 101, and 12 hours of the dairy manufacturing courses.

Special problems dealing with the manufacture and marketing of dairy products. Mr. Clevenger.

A. H. 302. Animal Nutrition III. 0-3-0

Elective for seniors. Prerequisite: A. H. 101, A. H. 211.

A study of the chemistry and physiology of nutrition and the processes of animal life; recent scientific publications are studied. Mr. Ruffner.

A. H. 304. Herd Improvement. 0-0-3

Prerequisite: A. H. 101, 208, 211. Elective for juniors and seniors.

This course is designed for training students as supervisors of Herd Improvement Associations in North Carolina. Rules for Advanced Registry are studied, and practical work in keeping feed costs, the Babcock Test, and bookkeeping necessary for dairy associations.

Mr. Haig.

A. H. 307. Problems in Advanced Animal Breeding. 3-0-0, 0-3-0, 0-0-3

Prerequisite: A. H. 202.

A study of the physiology of reproduction. Methods and problems of breeders; influence of pedigree, herd books, and Mendelism in animal breeding. Mr. Ruffner.

A. H. 308. Stock Farm Management. 0-0-3

Prerequisite: A. H. 101. Elective for seniors.

A study of successful methods of operating farms devoted chiefly to livestock production; special reference is made to best systems applied to North Carolina conditions. Mr. Ruffner.

A. H. 309. Home Tanning. 3-0-0 or 0-3-0

Elective for juniors and seniors. Prerequisite: A. H. 206.

Application of different methods in curing and tanning hides and pelts.

Mr. Nance.

A. H. 310. Pure-bred Livestock Production. 0-3-0

Elective for seniors and graduate students. Prerequisite: A. H. 101, 201.

A study of the pure-bred livestock industry. Lectures and discussion supplemented by assignments from current periodicals and breed papers. Special study of the selection of livestock best suited to different localities.

Mr. Ruffner.

Courses for Graduates Only

A. H. 402. Research Studies in Animal Husbandry. 3-0-0, 0-3-0, or 0-0-3

Prerequisite: Eighteen credits in Animal Husbandry.

An intensive study of experimental data. Staff.

A. H. 404. Advanced Nutrition. 3-0-0, 0-3-0, or 0-0-3

Prerequisite: A. H. 101, 211.

A survey of experimental feeding, together with a study of the fundamental and practical feeding problems of the various sections of the country. A study is made of the effects of various feeds on growth and development. Animals are used in demonstrating the effects of these various nutrients and rations. Mr. Ruffner.

A. H. 408. Special Problems in Dairy Manufacturing Practice. 3-3-3

Prerequisite: Eighteen term credits in Animal Husbandry.

Available for graduate students interested in special dairy manufacturing problems under definite supervision and approval.

Mr. Clevenger.

A. H. 409. Seminar. 1-1-1

Members of the seminar will be assigned subjects which will be reviewed and discussed. Review of literature, scientific reports and Experiment Station bulletins. Oral and written reports.

Animal Husbandry Staff.

ARCHITECTURAL ENGINEERING

Courses for Undergraduates

A. E. 100. Introduction to Architecture. 3-0-0

Required of sophomores in A. E. Prerequisite: M. E. 102. Exercises and studies of architectural elements and details, walls, openings, etc.

Mr. Shumaker, Mr. Edwards.

A. E. 101. Elements of Architecture. 0-3-3

Required of sophomores in A. E. Prerequisite: M. E. 102, 103. A study of the orders of Architecture and their application to simple problems in composition and design. Mr. Shumaker, Mr. Edwards.

A. E. 102. Shades and Shadows. 2-0-0

Required of sophomores in A. E. Prerequisite: M. E. 103. The determination of conventional shades and shadows as they occur on rendered drawings. Mr. Shumaker.

A. E. 103. Freehand Drawing I. Water Color. 0-2-0

Required of sophomores in A. E.

Painting from still life, models, and landscape with special regard for the technique useful for the architectural rendering. Mr. Edwards.

A. E. 104. Freehand Drawing II. Pencil Drawing. 2-0-0

Required of juniors in A. E.

Sketching in pencil from models, cast and nature. Emphasis on quality of line and proportion. Lettering. Mr. Edwards.

A. E. 105. Freehand Drawing III. Pen and Ink Drawing. 0-2-0

Required of juniors in A. E.

The drawing and rendering in pen and ink of subjects in architecture and nature. The development of good technique. Mr. Edwards.

A. E. 106. Freehand Drawing IV. Charcoal Drawing. 0-0-2

Required of juniors in A. E.

Charcoal drawing from simple architectural casts and models. Mr. Edwards.

A. E. 107. Pencil Sketching. 3-0-0, 0-3-0, 0-0-3

Elective for Engineering and Textile students.

Quick sketching of objects as seen and imagined in perspective. Elementary principle of perspective, especially as applied to the visualization of imagined objects. Mr. Paulson.

A. E. 108. Art Principles in Industry. 3-0-0

Elective for Engineering and Textile students.

Line, form, color and æsthetic principles of practical art applicable to the design of articles for manufacture. Mr. Paulson.

A. E. 109. Decorative Drawing. 3-0-0, 0-3-0, 0-0-3

Required of juniors in the Textile School. Freehand drawing and creative designing of decorative motives adaptable to weaving and cloth printing. Mr. Paulson.

A. E. 111. Architectural Details. 0-0-2

Required of juniors in A. E. and Const. Eng. Prerequisite: M. E. 102, 103.

The preparation of working drawings of sections and details of construction. Mr. Shumaker, Mr. Edwards.

A. E. 112. Practical Photography. 1-0-0

Required of juniors in A. E.

The practical use of photography as an aid in architectural rendition. Mr. Paulson.

Courses for Advanced Undergraduates

A. E. 201. Perspective Drawing. 0-0-2

Required of sophomores in A. E. Prerequisite: Arch. 102. Study of the theory of perspective with special applications to illustration and design. Lectures and drawing. Mr. Shumaker.

A. E. 202. Architectural Design I. 3-3-3

Required of juniors in A. E. Prerequisite: Arch. 101. Problems in elementary composition, design, planning and rendering. Library research. Registration with the Beaux-Arts Institute of Design may be required. Mr. Shumaker, Mr. Edwards.

A. E. 203. Advanced Rendering. 1-1-1

Required of seniors in A. E. Prerequisite: Arch. 103. Study of different methods of presentation. Problems in rendering various types of composition as media, water color, tempera, pastels, charcoal, pencil and ink. Mr. Edwards.

A. E. 204. Architectural Design II. 3-3-3

Required of seniors in A. E. Prerequisite: Arch. 202. Major problems in advanced planning and composition. Sketch problems, Library research. Registration with the Beaux-Arts Institute of Design may be required. Mr. Shumaker, Mr. Edwards.

A. E. 205. History of Architecture. 3-3-0

Required of juniors in A. E. Prerequisite: Arch. 101.

Origin and development of the historic styles of Architecture, from antiquity to modern times. Lectures. Library research with sketches. Mr. Shumaker.

A. E. 206. History of Ornament. 0-3-0

Required of juniors in A. E. Prerequisite: Arch. 205.

Analysis and development of the historic styles of ornament. Mr. Shumaker, Mr. Paulson.

A. E. 207. History of the Decorative Arts. 3-0-0 or 0-3-0

Elective for students of junior standing. Prerequisite: Arch. 205, or 209. Lectures and library research on the history of the decorative arts, including interior architecture, furniture, stained glass, etc. Mr. Shumaker.

A. E. 208. Appreciation of Fine Arts. 3-0-0, 0-3-0, 0-0-3, or 3-3-3

Elective for students of junior standing.

Principles of art. Study of those qualities which constitute great art. First term, architecture; second term, painting; third term, sculpture and the minor arts. Mr. Paulson.

A. E. 209. Domestic Architecture. 0-0-2

Required of juniors in A. E.

Planning and designing of residences. Construction, orientation, equipment, and finishing. Mr. Shumaker, Mr. Edwards.

A. E. 210. Architectural Office Practice. 2-2-2

Required of seniors in A. E. Prerequisite: Arch. 111.

The preparation of working drawings from sketches, following office routine. Mr. Shumaker, Mr. Edwards.

A. E. 211. Architectural Composition. 0-2-0

Required of seniors in A. E. Prerequisite: Arch. 205. Principles of planning and composition as related to buildings. Architectural motives, group planning. Library research and sketches. Mr. Shumaker.

A. E. 212. Architectural Estimates. 0-0-2

Required of seniors in A. E. Prerequisite: Arch. 111.

Lectures and problems in taking off quantities and in estimating materials and labor cost in building construction. Mr. Shumaker.

A. E. 213. Historic Motives in Textiles. 3-0-0

Elective for students of junior standing.

Chronologic development of ornament motives, and the adaptation of historic motives to modern textile design. Mr. Paulson.

A. E. 214. Art Appreciation for Teachers. 0-0-3

Picture study of the list suggested by the State Board of Education for grade school use, including paintings, architecture, and sculpture.

Mr. Paulson.

Courses for Graduates and Advanced Undergraduates

A. E. 301. Architectural Design III. 4-4-4

Prerequisite: Arch. 204.

Class A.—Project. Advanced problems in design. Archæology. Measured Drawings. Registration with the Beaux-Arts Institute of Design is required. Mr. Shumaker, Mr. Edwards.

A. E. 401. Historic Research. 4-4-4

Prerequisite: Arch. 204, 205.

Research in Architecture and Art in some important phase of its development. Library work with sketches. Mr. Paulson, Mr. Edwards.

BOTANY

Courses for Undergraduates

Botany 101, 102. General Botany. 4-4-0

Required of freshmen and sophomores in Agriculture.

The first term deals with the nature of the higher (crop type) plants; the second involves a survey of the major lower plant groups with the emphasis upon the economic forms (bacteria and fungi).

Mr. Wells, Mr. Shunk, Mr. Anderson, Mr. Whitford, Mr. Buell.

Courses for Advanced Undergraduates

Botany 201. Diseases of Field Crops. 3-0-0

Elective for juniors and seniors. Prerequisite: Bot. 101, 102, 209.

A study of the more important diseases of field crops, such as cotton, tobacco, corn, small grains, legumes and grasses. Major emphasis is placed on symptoms, cause, and control. Mr. Lehman.

Botany 202. Diseases of Fruit and Vegetable Crops. 0-0-3

Elective for juniors and seniors. Prerequisite: Bot. 101, 102, 209.

Lectures and laboratory studies of importance, causes, symptoms and control of diseases affecting these crops. Mr. Poole.

Botany 203. General Bacteriology. 0-4-0

Prerequisite: Bot. 101, 102, or Zool. 101.

An introduction to the principles of bacteriology. Laboratory work on modern cultural methods of handling and studying bacteria.

Mr. Shunk.

Botany 204. Systematic Botany. 0-0-3

Elective in Agriculture and Science. Prerequisite: Bot. 101, 102.

An introduction to the local flora and the classification of the plants included therein. Mr. Wells, Mr. Shunk, Mr. Whitford, Mr. Buell.

Botany 205. Plant Microtechnique. 0-3-0

Elective in Agriculture and Science. Prerequisite: Bot. 101, 102.

Materials and processes involved in the preparation of plant structures for microscopic examination. Mr. Anderson.

Botany 206. Rural Sanitation. 0-3-0

Required of seniors in General Agriculture. Elective for others.

A combination course on the relation of bacteria and insects to rural public health; meat and other food and water inspection; health laws.

Mr. Shunk, Mr. Grinnells, Mr. Weaver.

Botany 207. Dendrology. 3-0-3

Required of sophomores in Forestry. Prerequisite: Bot. 101, 102, 204.

Introduction to the trees of the eastern United States.

Mr. Wells, Mr. Shunk.

Botany 208. Diseases of Forest Trees. 3-0-0

Required of seniors in Forestry. Prerequisite: Bot. 101, 102, 209.

Lectures and laboratory studies of importance, causes, symptoms and control of diseases affecting trees and their products. Mr. Poole.

Botany 209. Plant Physiology. 0-0-5

Required of sophomores in Forestry. Prerequisite: Bot. 101, 102.

A study of the activities of living plants with special emphasis upon the fundamental principles concerned. Mr. Anderson.

Botany 210. Aquatic Biology. 0-0-2

Required of Sanitary Engineers. Elective in Agriculture and Science. Prerequisite: Bot. 101, 102.

Identification and control of the aquatic algæ and protozoa which give trouble in reservoirs. A survey of the higher water and marsh plants is also included. Mr. Whitford.

Courses for Graduates and Advanced Undergraduates

Botany 301. Advanced Plant Pathology. 5 or 5 or 5

Elective. Prerequisite: Bot. 101, 102, 201, 209, or 202.

A course designed to give the student training in those methods of investigation which are most useful in the study of plant pathological problems. Mr. Lehman.

Botany 302. Advanced Bacteriology. 0-3-0

Prerequisite: Bot. 101, 102, 203, 209.

A study of the methods used in the bacteriological analysis of water and milk. Mr. Shunk.

Botany 303 and 304. Plant Morphology. 3-3-0

Elective in Agriculture and Science. Prerequisite: Bot. 101, 102, 204.

An advanced survey of plants; the lower groups are given the first term, the higher (land plants) the second. Mr. Wells, Mr. Shunk.

Botany 305. Mycology. 0-3-3

Prerequisite: Bot. 101, 102.

A course dealing with the structure, identification and classification of fungi. Special attention is given to species parasitic on crop plants. Mr. Lehman.

Botany 306. Advanced Plant Physiology. 3-0-0

Prerequisite: Bot. 101, 102, 209.

A critical and comprehensive treatment of the various aspects of plant physiology. Particular attention is given to basic principles and to recent developments. Mr. Anderson.

Botany 307. Plant Ecology. 3-0-0

Elective in Agriculture and Science. Prerequisite: Bot. 101, 102, 209.

Environmental control of plant distribution with emphasis upon the habitats and vegetations of North Carolina. Mr. Wells.

Botany 308. Microanalysis of Plant Tissue. 0-3-0

Prerequisite: Bot. 101, 102, 209.

The identification in plant tissue of mineral elements and organic compounds and the physiological significance of these materials. Mr. Anderson.

Botany 309. Soil Microbiology. 0-0-3

Elective in Agriculture and Science. Prerequisite: Bot. 101, 102, 203, 209.

A study of the more important microbiological processes that occur in soils: decomposition of organic materials, ammonification, nitrification and nitrogen fixation. Mr. Shunk.

Botany 310. Advanced Plant Ecology. 0-0-3

Elective in Agriculture and Science. Prerequisite: Bot. 209, 307.

Practice in the use of the instruments necessary in the study of environmental factors. Advanced readings and conferences on plant distribution in relation to these factors. Mr. Wells.

Courses for Graduates Only

Botany 401. Pathology of Special Crops. 3-3-3

Prerequisite: Bot. 201 or 203, 301.

A comprehensive study of the etiology, symptoms, and control of specific diseases. Mr. Lehman or Mr. Poole.

Botany 402. Bacteriology: Special Studies. 3-3-3

Prerequisite: Bot. 203, 302.

Special work on restricted groups of bacteria such as nitrogen bacteria of the soil, milk organisms and special groups of bacteria in water. Mr. Shunk.

Botany 403. Systematic Botany. 3-0-0 or 0-0-3

Prerequisite: Bot. 204, 303, 304.

An advanced survey of restricted groups of plants involving organization and distribution problems. Mr. Wells.

Botany 404. Plant Physiology. 3-3-3

Prerequisite: Bot. 306, 209.

Critical study of some particular problem, involving original investigation together with a survey of pertinent literature. Mr. Anderson.

Botany 405. Plant Ecology. 3-0-0 or 0-0-3

Prerequisite: Bot. 204, 307.

Minor investigations in vegetation-habitat problems accompanied by advanced reference reading. Mr. Wells.

Botany 406. Research in Botany. 3-3-3

Prerequisite: 30 hours 100-300 courses in Botany. Staff.

Botany 407. Seminar. 1-1-1

Attendance by the student upon the weekly seminar together with the presentation of a paper in his major field of research. Mr. Wells.

CERAMIC ENGINEERING

Courses for Undergraduates

Cer. E. 103. Ceramic Materials. 0-3-0

Required of sophomores in Ceramic Engineering.

Prerequisite: Geol. 201.

The origin and occurrence of ceramic raw materials, their chemical and physical properties and systems of measuring them. Mr. Greaves-Walker.

Cer. E. 104. Ceramic and Mining Processes. 0-0-3

Required of sophomores in Cer. E. and Geol. E.

The winning and preparation of ceramic materials and the equipment and processes used in manufacturing ceramic products.

Mr. Greaves-Walker.

Cer. E. 105. Structural Clay Products. 0-1-0

Required of juniors in Constr. E.

The manufacture and use of ceramic products used in the construction industries. Mr. Greaves-Walker.

Courses for Advanced Undergraduates

Cer. E. 207. Bodies, Glazes, and Colors. 3-0-0

Required of seniors in Cer. E. Prerequisite: Chem. 231, Cer. E. 209, and Geol. 235.

Lectures on composition and production of ceramic bodies, glazes, and colors. Mr. Stone.

Cer. E. 208. Drying Technology. 3-0-0

Required of Juniors in Cer. E. Prerequisite: Cer. E. 104.

The theory and practice of drying ceramic products.

Mr. Greaves-Walker.

Cer. E. 209. Ceramic Calculations. 0-0-3

Required of juniors in Cer. E. Prerequisite: Chem. 212, Cer. E. 103, 208, 213. Solution of chemical and physical problems of the ceramic industries. Mr. Stone.

Cer. E. 210. Metal Enamels. 0-3-0

Required of seniors in Cer. E. Prerequisite: Chem. 212, Cer. E. 209.

Theory and practice of the application of enamels to metals.

Mr. Stone.

Cer. E. 212. Ceramic Products. 0-0-3

Required of juniors in Cer. E. Prerequisite: Cer. E. 104.

A study of the physical, chemical, and artistic requirement of ceramic products. Laboratory practice. Mr. Greaves-Walker.

Cer. E. 213. Firing Technology. 0-3-0

Required of juniors in Cer. E. Prerequisite: Cer. E. 103 and 208.

The theory and practice of firing ceramic products.

Mr. Greaves-Walker.

Cer. E. 214. Pyrometry. 1-0-0

Required of seniors in Cer. E. Prerequisite: Cer. E. 213.

The theory and use of temperature measuring instruments in industry.

Mr. Stone.

Courses for Graduates and Advanced Undergraduates

Cer. E. 300. Ceramic Laboratory. 3-3-3

Required of seniors in Cer. E. Prerequisite: Cer. E. 207, 208, 209, 212, and 213.

Advanced practice in producing and determining the chemical and physical properties of ceramic materials and products.

Mr. Greaves-Walker and Mr. Stone.

Cer. E. 301. Refractories. 0-0-3

Required of seniors in Cer. E. and Geol. E. Prerequisite: Chem. 212, Geol. 235, Cer. E. 103.

Refractory materials and manufacture of refractory products.
Use of refractory products in industrial furnaces.

Mr. Greaves-Walker.

Cer. E. 302. Advanced Glazes and Colors. 3-3-3

Prerequisite: Cer. E. 207.

Advanced laboratory practice in glazes and colors.

Mr. Stone.

Cer. E. 303. Ceramic Designing. 0-5-5

Required of seniors in Cer. E. Prerequisite: M. E. 110, Cer. 104, 208, 209, and 213.

Designing of ceramic equipment and structures.

Mr. Greaves-Walker.

Courses for Graduates Only

Cer. E. 400. Designing of Ceramic Equipment and Plants. 3-3-3

Prerequisite: Cer. E. 303.

Advanced study and designing of ceramic machinery, dryers, kilns, and plant structures. Mr. Greaves-Walker.

Cer. E. 401. Advanced Refractories and Furnaces. 3-3-3

Prerequisite: Cer. E. 301.

Advanced study of refractory materials and products and their use.

Mr. Greaves-Walker.

Cer. E. 402. Industrial Adaptability of Ceramic Materials. 3-3-3

Prerequisite: Cer. E. 300.

Laboratory investigations to determine the industrial uses to which various North Carolina ceramic materials can be put.

Mr. Greaves-Walker, Mr. Stone.

Cer. E. 403. Ceramic Research. 3-3-3

Prerequisite: Cer. E. 300.

Research problems in ceramics will be assigned to meet the desire of the student for specialization.

Mr. Greaves-Walker, Mr. Stone.

CHEMICAL ENGINEERING

Courses for Undergraduates

Chem. E. 101. Introduction to Chemical Engineering. 1-1-1

Required of sophomores in Chem. E. Prerequisite or concurrent: Math. 201, M. E. 102, M. E. 104.

Introduction to Chemical Engineering work and practice; reactions in chemical processes, illustrative problems, and control methods.

Mr. Randolph.

Courses for Advanced Undergraduates

Chem. E. 201. Industrial Chemistry. 3-3-3

Required of juniors in Chem. E., and of seniors in Textile Chemistry and Dyeing. Prerequisite: Chem. E. 101, or Tex. 212.

Equipment, materials, methods, and processes employed in chemical manufacture; water, fuels, and power; conversion of raw materials into such necessary products as sugar, paper, gas, leather, paint, glass; waste materials and by-products. Mr. Randolph, Mr. Lauer.

Chem. E. 202. Chemical Engineering Laboratory I. 1-1-1

Required of juniors in Chem. E. Prerequisite or concurrent: Chem. E. 201.

A laboratory study of industrial control methods; industrial plant visits; problems and processes solved and presented in technical reports.

Mr. Lauer, Mr. Cooper.

Chem. E. 204. Water Treatment. 3-0-0 or 0-3-0 or 0-0-3

Required of seniors in Chem. E. Prerequisite: Chem. E. 201.

Supplies of water; filter plant machinery, equipment and practice; water purification and softening; types of filters; requirements of waters for municipal and manufacturing purposes; water analysis; research on water purification and industrial waste treatment.

Mr. Randolph, Mr. Comings, Mr. Cooper.

Chem. E. 205. Chemistry of Engineering Materials. 3-3-3 or 0-3-0

Required of seniors in Chem. E. Prerequisite: Chem. E. 201, M. E. 102 and 219, and Math. 201.

Technical study of engineering materials, suitable materials for manufacturing plants; machines, and special uses; corrosion and chemical action; paints and protective coatings; metallurgy; strength, toughness, and elasticity of metals; chemical, metallographic, and microphotographic examination of metals and alloys, and other materials; fire assaying.

Mr. Randolph, Mr. Comings, Mr. Cooper.

Chem. E. 207. Chemical Principles. 0-3-3 or 3-3-3

Prerequisite or concurrent: Chem. E. 201.

Fundamental principles in chemical manufacture and correlation of these principles in unit processes and operation.

Mr. Randolph, Mr. Cooper.

Chem. E. 208. Treatment of Water and Sewage. 3-0-0 or 0-0-3

Required of juniors in San. E. Prerequisite: Ch. E. 201 or C. E. 104.

Principles involved in the control of municipal water supplies and in sewage treatment; reactions involved; chemical nature of water and sewage treatment; methods for removal of the more objectionable materials in industrial waters. Mr. Randolph, Mr. Cooper.

Chem. E. 210. Industrial Stoichiometry. 3-0-0 or 0-3-0 or 0-0-3

Required of juniors in Chemical Engineering. Prerequisite or concurrent: Chem. E. 201.

Industrial calculations and measurements; heat balances; material balances; fuels and combustion processes; principles of chemical engineering mathematical calculations. Mr. Lauer.

Courses for Graduates and Advanced Undergraduates

Chem. E. 300. Principles of Chemical Engineering. 3-3-3

Required of seniors in Chem. E. Prerequisite or concurrent: Chem. E. 201, Chem. E. 210, Math. 201.

Survey of field of Chemical Engineering; control in industrial manufacture; flow of fluids and of heat; equipment for, and principles involved in, such processes as crushing and grinding, separation, evaporation, distillation, filtration; humidification; drying, absorption, and extraction; industrial calculations; design and efficiency of chemical machinery.
Mr. Randolph, Mr. Comings, Mr. Cooper.

Chem. E. 301. Electrochemical Engineering. 3-3-3 or 0-0-3

Required of seniors in Chem. E. Prerequisite or concurrent: Chem. E. 201.

Theory and practice of electrochemical industries; principles of electrolysis and other electrochemical processes; electric furnace; electrothermal operations, electrometallurgy.
Mr. Randolph, Mr. Cooper, Mr. Comings, Mr. Lauer.

Chem. E. 302. Industrial Oils, Fats and Waxes. 0-0-3 or 3-0-0

Elective for juniors or seniors in Chem. E.

Prerequisite: Chem. E. 201.

Commercial practice in the manufacture, refining, and conversion of oils and their by-products; analyses, tests, and methods of preparation for foods and feeds; drying, semi-drying, and essential oils; industrial fats and waxes. Mr. Lauer.

Chem. E. 303. Gas Engineering. 0-0-3 or 3-3-3

Elective for seniors or graduates in Chem. E.

Prerequisite: Chem. E. 201.

A gas engineering course; manufacture of industrial fuels gases and their distribution; advances made in the industry; apparatus and equip-

ment; general practice in gas plants; application and use of gas and the by-products of its manufacture; pipe lines, service connections, gas meters. Mr. Randolph.

Chem. E. 304. Sanitation Processes. 0-0-3

Prerequisite: Chem. E. 201.

Technical study of the methods of sanitation in industrial plants; equipment and practice in the disposal and treatment of waste materials and sewage; measures necessary in eliminating occupational disease hazards. Mr. Randolph, Mr. Lauer.

Chem. E. 305. Industrial Application of Physical Chemistry.

Prerequisite: Chem. E. 207, 201. 3-3-3 or 0-3-3

Special phases of physical chemistry studied technically, with reference to the practical application of these principles in the industries and in the arts. Mr. Cooper.

Chem. E. 306. Fuel and Combustion Engineering. 3-3-3

Prerequisite: Chem. E. 300.

Fundamental principles and mechanism of the combustion reactions; quantitative application to problems of design or use of equipment for fuel processing and utilization; and a thorough study of solid, liquid and gaseous fuels, with complete methods of analysis.

Mr. Comings, Mr. Cooper.

Chem. E. 307. Chemical Engineering Laboratory and Design II. 2-2-2

Required of seniors in Chem. E. Prerequisite or concurrent: Chem. E. 300.

A laboratory study of measurement of flow of fluids and heat; crushing and grinding, distillation; evaporation; drying; humidity; filtration and mechanical separation; absorption, and extraction. Calculations, design and construction of equipment for these fundamental unit operations in chemical industry. Mr. Randolph, Mr. Comings, Mr. Cooper.

Chem. E. 308. Chemical Plant Design. 3-3-3

Prerequisite: Chem. E. 201.

Location, layout and complete design of the chemical plant and its process equipment. Materials of construction. Economic factors controlling the chemical industry, and optimum design from the standpoint of economic return. Mr. Cooper.

Chem. E. 309. Chemical Engineering Thermodynamics. 3-3-3

Prerequisite or concurrent: Chem. E. 300.

A study of the thermal properties of matter and energy relationships underlying chemical processes. A thorough consideration of fundamental laws of energy as applied to Chemical Engineering problems and processes in industry. Mr. Comings.

Chem. E. 310. Cellulose and Allied Industries. 3-3-0 or 3-3-3

Required of seniors in Forestry. Prerequisite or concurrent: Chem. E. 201 or Forestry 206, 207.

Cellulose and its compounds; forest raw material for chemical industries; methods and processes; control conditions; machinery; equipment; water requirements; processes for manufacture of paper; rayon; tannin; tar; pitch; turpentine; creosote; wood alcohol; acetic acid; acetone; rubber, and cellulose conversion products; distillation, and extract industries. Mr. Randolph, Mr. Lauer.

Courses for Graduates Only

Chem. E. 401. Chemical Technology. 3-3-3

Prerequisite: Chem. E. 300.

An advanced course in problems, processes, and methods of chemical manufacture and production; special problems of local manufacturing plants worked out under plant conditions; optimum production conditions; special study in applied inorganic, applied organic chemistry, and research in applied chemistry. Mr. Randolph, Mr. Lauer.

Chem. E. 402. Industrial Chemical Research. 3-3-3

Prerequisite: Chem. E. 201.

Chemical research on some industrial problem relating to North Carolina resources; practice in industrial plants, control analyses, estimate of losses, costs, data sheets, technical report. Staff.

Chem. E. 403. Chemical Engineering Research. 3-3-3

Prerequisite: Chem. E. 300.

Some plant problem studied exhaustively by making investigations at the chemical plant, and by supplementary experiments and research in the laboratory; measurements, tabulation, graphs, and calculation of some actual plant problem. Staff.

Chem. E. 404. Heat Transmission. 3-3-3

Prerequisite: Chem. E. 300, Chem. E. 307.

A study of the film resistances and coefficients of heat transfer for evaporating, condensing, warming, and cooling; application in the design of evaporators, stills, condensers, and heat exchangers; correlation of data by the methods of dimensional analysis, and interrelationships between heat transfer and fluid friction. Staff.

CHEMISTRY

Courses for Undergraduates

Chem. 101, 103, and 105. General Inorganic Chemistry. 4-4-4

Recitations and laboratory work; theories and laws, history, occurrence, preparation, properties, and uses of the more important elements and their compounds; formulæ, valence, equations and calculations.

Messrs. Caveness, Reid, Jones, Jordan, Satterfield, Showalter, Wilson, and Williams.

Chem. 109. Chemical Calculations. 0-3-0 or 0-0-3

Prerequisite: Chem. 101, 103, 105.

Chemical problems, especially in analytical work. Lectures are given in principles, theories, laws, etc., upon which the problems are based; assigned problems for discussion. Mr. Caveness.

Chem. 211. Qualitative Analysis. 4-0-0

Required of sophomores in Ceramic, Chemical, and Mining Engineering and those majoring in chemistry and of sophomores in Textile Chemistry and Dyeing.

Prerequisite: Chem. 101, 103, 105.

Chemical analysis: identification and separation of more common ions and analysis of mixtures of salts and of commercial products.

Mr. Wilson.

Chem. 212. Quantitative Analysis. 0-4-0

Required of sophomores in Ceramic Engineering, Chemistry, Chemical Engineering, and Textile Chemistry and Dyeing.

Prerequisite: Chem. 211.

Gravimetric and volumetric methods of analysis, including alkalimetry, acidimetry, oxidation, and reduction methods. Mr. Wilson.

Chem. 213. Quantitative Analysis. 0-0-4

Required of sophomores in Chemical Engineering and those majoring in Chemistry. Prerequisite: Chem. 211.

A continuation of Chem. 212. Substances of more difficult nature are analyzed, as minerals, steel, alloys, limestone, Paris green, etc.

Mr. Wilson.

Chem. 214.—Quantitative Analysis. 0-0-4

Required of students in Textile Chemistry and Dyeing.

A continuation of Chem. 212. Substances of more difficult nature are analyzed, as sulphites, sulphides, bleaching powder, Turkey Red Oil, soaps, etc. Mr. Wilson.

Chem. 215. Quantitative Analysis. 0-0-4

Prerequisite: Chem. 211. Elective for agricultural students.

Course allows student to choose field of analysis, such as soil analysis, fertilizers, feedstuffs, insecticides, and fungicides. Mr. Wilson.

Chem. 231. Physical Chemistry. 5-0-0

Required of Cer. E.; elective to others. Prerequisite: Chem. 101, 103, 105.

Fundamental chemical principles from a physiochemical viewpoint; special attention to silicate analysis, colloids, and phase rule.

Chem. 241. Introduction to Organic Chemistry. 0-4-0 or 0-0-4

Required of sophomores in Agriculture. Elective for others. Prerequisite: Chem. 101, 103, 105.

Hydrocarbons, alcohols, aldehydes, ketones, acids, ethers, esters, amino acids, and benzine derivatives; carbohydrates, fats, proteins, and related compounds. Mr. Williams.

Courses for Graduates and Advanced Undergraduates

Chem. 303. Historical Chemistry. 2-0-0

Prerequisite: Chem. 101, 103, 105.

Development of Chemistry and the history of men instrumental in the progress of Chemistry. Mr. Williams.

Chem. 304. Theoretical Chemistry. 0-2-2

Prerequisite: Chem. 101, 103, 105.

Atoms and molecules, chemical reactions and conditions influencing them, electronic conception of valence, radio activity, etc.

Mr. Williams.

Chem. 311. Advanced Qualitative Analysis. 4-0-0

Prerequisite: Chem. 211 or its equivalent.

Theory and reactions in analysis of more complex compounds.

Mr. Wilson.

Chem. 315. Advanced Quantitative Methods. 0-3-0 or 0-0-3

Prerequisite: Chem. 213 or its equivalent.

Methods and apparatus in advanced quantitative analysis; heat of combustion, colorimetry, hydrogen ion concentration, electric combustion of steel, etc. Mr. Wilson.

Chem. 321. Organic Chemistry. 4-4-4

Required of juniors in Chemical Engineering, Chemistry, and Textile Chemistry and Dyeing. Elective for others. Prerequisite: Chem. 101, 103, 105.

Aliphatic and aromatic compounds; practical applications; methods of preparation and purification of compounds, and their structures.

Mr. Williams.

Chem. 331. Physical Chemistry. 4-4-4 and 4-4-0

Three terms required of seniors in Chemistry; the first two terms only required of Chemical Engineers. Prerequisite: Chem. 213.

Principles of Physical Chemistry; laws and theories, application to various branches of chemistry and to industrial processes. Mr. Jordan.

Chem. 335. Chemistry of Colloids. 0-3-0

Prerequisite: Chem. 241 or 321.

Colloidal behavior, osmotic pressures, dialysis, sols and gels, membranes and membrane equilibria, proteins, and Donnan equilibrium.

Mr. Jones.

Chem. 340. Food Products and Adulterants. 3-0-0 or 0-3-0

Designed for students in all schools. Prerequisite: Chem. 101, 103, 105, and 241.

Food principles, cereals, starches, sugars, fats, milk and milk products, the packing house, food preservation, beverages, spices and condiments; food legislation. Mr. Satterfield.

Chem. 341. Chemistry of Vitamins. 0-3-0 or 0-0-3

Prerequisite: Chem. 241 or 321.

Application of vitamin hypothesis to human nutrition; history, nomenclature, properties, distribution, effects of deficiencies, and vitamin values. Mr. Satterfield.

Chem. 342. Physiological Chemistry. 3-3-0

Prerequisite: Chem. 241 or 321.

Essential chemical facts pertaining to life processes; digestion, absorption, metabolism, secretions, and excretions; lectures and laboratory. Mr. Satterfield.

Chem. 343. Blood Analysis. 0-3-0 or 0-0-3

Prerequisite: Chem. 212 or 321.

Hemoglobin, sugar, urea, uric acid, cholesterol, creatine, creatinine, non-protein nitrogen, amino acid nitrogen, calcium, etc.; Folin-Wu system is emphasized; lectures and laboratory. Mr. Satterfield.

Chem. 344. Food and Nutrition. 0-3-3

Prerequisite: Chem. 241 or 321.

Open to all students desiring a practical knowledge of the subject.

Carbohydrates, fats, proteins, amino acids, minerals, fiber, vitamins and enzymes; nutritive value of food materials; digestion, food idiosyncrasy; acidosis and alkalosis. Mr. Satterfield.

Chem. 345. Agricultural Chemistry. 3-0-0

Prerequisite: Chem. 101, 103, 105, and 241.

Feeding the plant; insecticides and fungicides; transforming the plant into human food and animal food. Composition of plants; relation between composition and uses. Mr. Satterfield.

Courses for Graduates Only

Chem. 417. Micro-chemical Analysis. 0-0-3

Prerequisite: Chem. 213.

Inorganic micro qualitative analysis; fibres, starches, etc. Mr. Wilson.

Chem. 421. Organic Chemistry, Advanced. 3-3-3

Prerequisite: Chem. 321.

Principles of Organic Chemistry, current literature; laboratory work and preparation in quantity. Mr. Williams.

Chem. 422. Organic Qualitative Analysis. 3-0-0

Prerequisite: Chem. 321.

Detection of elements and radicals, group characteristics.

Mr. Williams.

Chem. 423. Organic Quantitative Analysis. 0-3-0

Prerequisite: Chem. 212, 321.

Analysis of organic compounds for carbon, hydrogen, nitrogen, the halogens, sulfur, etc. Mr. Williams.

Chem. 424. Organic Micro-Analysis. 0-0-3

Prerequisite: Chem. 321.

Tests for compounds, and impurities in quantities too small to be detected by ordinary methods. Mr. Williams.

Chem. 441. Biochemistry. 0-3-3

Prerequisite: Chem. 321 and 344.

Special topics in Biochemistry. Advanced study in the fields of Biochemistry. Mr. Satterfield.

Chem. 451. Chemical Research. 3-3-3

Prerequisite: 54 term credits in Chemistry. Open to all graduates.

Special problems that will furnish material for a thesis.

Mr. Jordan, Mr. Satterfield, Mr. Williams, Mr. Wilson.

Chem. 491. Seminar. 1-1-1

Required of graduate students specializing in Chemistry.

Preparation and presentation of abstracts of current publications in the field of Chemistry.

CIVIL ENGINEERING

Courses for Undergraduates

C. E. 100. Drawing. 1-1-1

Required of Freshmen in Forestry.

Plain lettering, common symbols, platting of areas from compass survey notes furnished, filling in contours from notes furnished, tracing, calculation of areas—by planimeter. Finished maps.

Mr. Fontaine.

C. E. s101. Surveying and Mapping. 3 credits.

Required in summer immediately following sophomore year in Forestry.

Prerequisite: C. E. 206, C. E. 207, and C. E. 208a.

Boundary; topographical surveys, and calculations of sections of College Experimental Forestry Lands. Finished section maps. Staff.

C. E. s102. Surveying. 3 credits.

Required in the summer immediately following the freshman year in Agr. Eng., A. E., Cer. E., and E. E. and M. E. following the sophomore year. Offered in 1935.

The use, care and adjustment of surveying instruments; elementary land surveying, traverse lines, leveling, topographical surveying and stadia measurements. Mr. Mann and Staff.

Note: Two sessions, (a) Full time 3 weeks immediately following close of College third term; (b) Half time, 6 weeks concurrently with the College Summer School term in order to allow students to schedule summer school work.

Courses for Advanced Undergraduates

C. E. 200. Mechanics A, B, C. 3-3-3

Required of all students in Engineering. Prerequisite: Math. 201.

Statics, concurrent, non-concurrent, and parallel forces, friction, centroids, and moment of inertia; kinetics, rectilinear and curvilinear motion; rotation; work, power and energy.

Messrs. Mann, Geile, Shaw, and Bramer.

C. E. 201. Materials of Construction. 3-0-0

Required of juniors in C. E., H. E., and Constr. E., San. E., M. E. and A. E.

The study of materials used in buildings and other engineering structures, with particular reference to their methods of manufacture and physical properties. Two periods lecture and recitation; one period laboratory. Mr. Geile and Mr. Tucker.

C. E. 202. Sanitary and Mechanical Equipment of Buildings. 0-0-3

Required of seniors in Constr. E. Prerequisite: C. E. 200.

A study of water supply, soil, waste, and vent-pipe systems, principles and practice of heating and ventilating and a discussion of various other mechanical equipment of a building, such as elevators, dust-collecting systems, etc. Mr. Geile, Mr. Vaughan.

C. E. 203. Strength of Materials. 0-3-3 also 3-0-0 or 0-0-3

Two terms required of juniors in A. E., C. E., Constr. E., San. E., H. E. and M. E.; one term required in Cer. E., Ch. E., E. E., and I. E.

Prerequisite: C. E. 200.

Stresses in beams, columns and shafts. Shear, flexure, and deflection formulas. Beams with more than two supports.

Mr. Mann, Mr. Tucker, and Mr. Geile.

C. E. 204. Reinforced Concrete. 3-0-0

Required of all Seniors in Department of Civil Engineering and Architectural Engineering.

Prerequisite: C. E. 200.

Derivation of formulas used in reinforced concrete design, use of diagrams and curves. Illustrative problems in design.

Mr. Mann, Mr. Geile.

C. E. 205. Hydraulics. 0-3-3 or 0-3-0 or 0-0-3

Required in C. E., H. E., San. E., Constr. E., Aero. E., M. E., E. E., and Geol. E.

Prerequisite: Phys. 104, and Math. 201, 202.

Pressure, laws governing flow in pipes and conduits, flow through orifices and nozzles and over weirs; losses from friction and other sources. Methods of measuring the flow of streams; determination of waterpower in streams; hydraulic motors and pumps.

Mr. Riddick, Mr. Johnson, Mr. Mann.

C. E. 206. Surveying, Theoretical. 3-3-3

Required of sophomores in Civil Engineering, San. Eng., Highway Engineering. Required of Forestry, Geol. Eng., Landscape Architecture, and Construction Engineering—first and second terms only.

Use, care and adjustment of surveying instruments, Land Surveying, Topographical Surveying, Leveling and Theory of stadia measures, plane table, etc.

Third term, railroad surveys, including simple, compound, reverse, and spiral curves, turnouts, etc. Staff.

C. E. 207. Field Surveying. 1-1-1

Required in C. E., San. E., H. E., and Landscape Architecture. Required in Constr. E. and Geol. E.—first and second terms only. Required in Forestry first term only.

Surveying field practice, topographical surveys, railroad and highway curves. Profiles, cross-sections. Staff.

C. E. 208a. Topographic Drawing. 0-1-0

Required in Forestry, Landscape Architecture, Geological Engineering. Plotting by coördinates; contours and general topography. Staff.

C. E. 208. Engineering Drawing. 1-1-1

Required of all students in Civil, Sanitary, and Highway Engineering.

Prerequisite: C. E. 206-207.

Conventional signs and lettering, complete topographic map, plans, profile, cross-sections for railroads or highways; calculation of areas and volumes for grading and plans for drainage structures. Mr. Tucker.

C. E. 209. Graphic Statics. 1-0-0

Required of all students in Departments of Civil and Architectural Engineering.

Principles involved in the solution of problems by graphical methods. Moments, shears. Resultant pressure on retaining walls. Stress diagrams. Mr. Mann.

C. E. 211. Construction Engineering I. 3-3-3

Required of Juniors in Constr. E.

Preparation of working drawings, good practice in masonry and frame construction, estimating quantities. Mr. Geile.

C. E. 214. Mill and Mill Village Sanitation. 3-0-0

Required of students in Textile Chemistry and Dyeing.

Prerequisite: Chem. 105.

Mill and mill village water supply and sewage disposal, mosquito and fly control, sanitary milk supply, industrial hygiene. This course given for textile students. Mr. Johnson.

C. E. 215. Sanitary Engineering. 0-0-3

Required of juniors in San. E. Prerequisite: Chem. 105.

This course covers, in a general way, the field of Sanitary Engineering, including: water supply and sewage disposal; ventilation; mosquito and fly control; refuse disposal; public health laws and organization.

Mr. Johnson.

C. E. s220. Advanced Surveying. 3 credits.

Required in the summer immediately following the sophomore year in Civil Engineering.

Offered first in 1936.

Prerequisite: C. E. 206 and 207.

Plane table practice, special problems in surveying practice; triangulation, railroad and highway spirals; hydrographic surveying with sextant; plane table problems; the use and rating of current meters; measurement of stream flow; drainage problems.

Laying out proposed construction work. Topography, details, special problems. Mr. Mann and Staff.

Courses for Graduates and Advanced Undergraduates

C. E. 301. Applied Astronomy. 0-0-4

Required of seniors in C. E. and H. E. Prerequisite: C. E. 206, 207.

The application of astronomy in determining latitude, azimuth, longitude and time; astronomical observations with transit and sextant; reduction of observations. One credit given for observations.

Mr. Tucker.

C. E. 302. Construction Engineering II. 3-3-3

Required of seniors in Constr. E. Prerequisite: C. E. 200, 211.

Study of construction of reinforced concrete and steel framed structures. Estimation, cost analysis, organization, management of construction plants, field methods, proposals and contracts. Mr. Geile.

C. E. 303. Construction Equipment. 3-0-0

Required in Construction Engineering.

A study of hoists, concrete mixers, excavators, tools, and general equipment used on construction. Mr. Geile.

C. E. 304. Financing of Sanitary Utilities. 0-0-3

Required in Sanitary Engineering.

Rates and service charges, collections, operating cost control, bond issues, and budgets. Mr. Johnson.

C. E. 305. Waterworks. 0-3-0

Required of seniors in C. E. and San. E. Prerequisite: C. E. 205.

Municipal waterworks; quantity; sources of supply, collection; purification, distribution. Mr. Johnson.

C. E. 306. Railroad Economics. 0-3-0

Required of seniors in Civil Engineering. Prerequisite: C. E. 206.

Economics of railroad location; construction, maintenance and operation; betterment and valuation surveys. Mr. Mann.

C. E. 307. Sanitary Engineering Laboratory. 1-1-0

Required in Civil Engineering and Sanitary Engineering.

Laboratory analysis of sewage and sludge. Inspection trips to sewage disposal plants. Laboratory analysis for determining quality and safety of water. Inspection of waterworks in various cities. Mr. Johnson.

C. E. 308. Sewerage. 3-0-0

Required in C. E. and San. E. Prerequisite: C. E. 205, Chem. E. 208.

Separate and combined sewer systems; principles of design and construction; sewer appurtenances; disposal plants. Mr. Johnson.

C. E. 309. Specifications. 0-3-0

Required of seniors in Constr. E. Prerequisite: C. E. 211.

Preparation of specifications and legal documents for building operations. Mr. Geile.

C. E. 310. Water Purification. 0-0-3

Required of seniors in San. E. Prerequisite: C. E. 205.

Design and operation of water purification plants: sedimentation, coagulation, filtration, and sterilization of water. Recent treatment processes. Inspection trips to various plants. Mr. Johnson.

C. E. 311. Sewage Disposal. 0-3-0

Required of seniors in San. E. Prerequisite: C. E. 308.

Design and operation of sewage disposal plants; treatment processes and devices; efficiencies and costs of plants; public health, legal and economic problems involved. Inspection trips to disposal plants.

Mr. Johnson.

C. E. 312. Accident Prevention in Construction. 0-0-3

Required in Construction Engineering.

Causes and costs of accidents in construction. A study of methods used in accident prevention work. Mr. Geile.

C. E. 313. Theory of Structures. 3-3-0

Required of seniors in C. E., H. E., Constr. E., San. E. Prerequisite: C. E. 203.

Roof trusses; bridge trusses; three hinged arch, lateral bracing and portals; rigid frame, wind stresses in tall buildings, indeterminate trusses, secondary stresses. Mr. Geile.

C. E. 314. Structural Design. 0-3-3

Required of seniors in C. E., H. E., Constr. E., San. E. Prerequisite: C. E. 203 and first term C. E. 313.

Design of beams, columns, tension members, plate girders, trusses and structures. Mr. Mann.

Courses for Graduates Only

C. E. 401. Advanced Sewage Disposal. 3-3-0

Prerequisite: C. E. 311.

Study of sewage, sludge, and industrial wastes, efficiencies obtained by different types of disposal plants, treatment processes and their results, sludge conditioning, digestion and disposal. Mr. Johnson.

C. E. 402. Advanced Water Purification. 0-3-3

Prerequisite: C. E. 310.

Study of water purification processes, primary and secondary treatments control of tastes and odors, and treatment of colored waters.

Mr. Johnson.

C. E. 403. Sanitary Engineering Research. 3-3-3

Prerequisite: C. E. 215, 310, 311.

In the first term a study of recent developments and research in Sanitary Engineering is made from current literature. In the second term a research problem is selected and data on the problem is compiled from literature. In the third term individual research work is done.

Mr. Johnson.

C. E. 404. Advanced Structural Theory. 3-3-3

Prerequisite: C. E. 313.

Stress analysis in continuous frames and arches; secondary stresses; wind stresses and space frame-work. Mr. Geile.

C. E. 405. Construction Engineering Research. 3-3-3

Prerequisite: C. E. 302.

Study of recent advancement and developments in Construction. Original research. Mr. Geile.

ECONOMICS

Courses for Undergraduates

Econ. 102. Introduction to Economics. 3-0-0 or 0-3-0 or 0-0-3

Required of students in Forestry, Land. Arch., and Ind. Arts. Not open to students in Business Administration.

It treats of the business aspects and economic organization of society; production, distribution, and value of economic goods. Mr. Green.

Econ. 103. General Economics. 3-3-3

Required of sophomores in Constr. E., Ind. Chemistry, I. E., Ind. Mgt.; juniors in Agricultural Teaching, Cer. E., C. E., H. E., M. E. and Textile curricula, and of seniors in A. E., Chem. E. and San. E.

A study of economic institutions and general principles governing production and distribution of wealth under the existing economic organization. Messrs. Green, McNatt, Moen, Leager, and Brown.

Econ. 112. Accounting for Engineers. 3-0-0 or 0-3-0 or 0-0-3

Required of juniors in Cer. E. and seniors in Chem. E.

A survey of accounting and financial statements and records; devices, statements, and cost records; their construction, their use and interpretation. Mr. Shulenberger.

Courses for Advanced Undergraduates

Econ. 201. Accounting I. 3-3-3

Required of all sophomores in Industrial Management and of juniors in Industrial Engineering.

Fundamental principles of theory and practice; interpretation of structure, form and use of business statements.

Messrs. Shulenberger and Leager.

Econ. 210. Business Organization. 0-3-0

Required of seniors in Highway Engineering. Prerequisite: Econ. 102 or 103.

Forms of business enterprises; single enterprises, partnerships, joint-stock companies and corporations; and principles of business management. Mr. Green.

Econ. 211. Business Law. 3-0-0 or 0-3-0 or 0-0-3

Required of seniors in Business Administration, Engineering, and Industrial Management.

Sources of law, fields of law, contracts, agency, sales, negotiable documents, and the law as it controls business transactions. Mr. Green.

Econ. 215. Marketing Methods. 3-3-3

Prerequisite: Econ. 102 or 103.

Marketing functions, agencies, systems, retailing, market analysis, markets. Mr. Moen.

Econ. 216. Marketing Methods and Sales Management. 3-3-3

Required of seniors in Industrial Management. Prerequisite: Econ. 102 or 103.

Marketing methods; problems in industrial marketing; sales management in industry. Mr. Moen.

Econ. 217. Advertising. 3-0-0

Required of seniors in Business Administration, Marketing Group.

Principles and practice of Advertising. Mr. Moen.

Econ. 218. Sales Management. 0-3-3

Required of seniors in Business Administration, Marketing Group.

Administrative policy and organization; sales methods, planning and research; sales control. Mr. Moen.

Econ. 221. Money, Credit, and Banking. 3-3-0

Prerequisite: Econ. 102 or 103.

Banking and credit institutions, price changes, monetary and banking developments; Federal Reserve System and money market. Mr. Moen.

Econ. 223. Business Finance. 0-0-3

Prerequisite: Econ. 102 or 103.

Raising and spending of funds, and standards of control. Mr. Moen.

Econ. 229. Purchasing and Storeskeeping.

Elective. Prerequisite: Econ. 102 or 103.

Standards and specifications, requisitions, purchase orders, and their applications. Mr.....

Econ. 230. Industrial Management. 3-3-3

Required of juniors in Industrial Management, Finance, Banking and Accounting. Prerequisite: Econ. 103.

Internal working of industrial enterprises; control through budget-making, production and planning methods; industrial problems.

Mr. Henninger.

Econ. 230-A. Industrial Management. 3-3-0

Required of seniors in Textile Engineering. Prerequisite: Econ. 102.

A more specialized course than Econ. 230. Industry in general with emphasis and application to textile industry. Mr. Henninger.

Econ. 231. Industrial and Personnel Management. 3-3-3

Prerequisite: Econ. 103.

More general treatment of Economics 230 and Economics 340; administrative features. Personnel management, and production controls.

Mr. Henninger.

Econ. 233. Office Management. 0-0-3

Elective. Prerequisite: Econ. 102 or 103.

Principles of management, office arrangements, filing methods, office personnel, business documents, reports, dictation and correspondence.

Mr. Green.

Econ. 239. Labor Problems. 3-0-0

Required of seniors in Industrial Management; elective for others. Prerequisite: Econ. 102 or 103.

History, organization, activities, and policies of organized labor. Recent developments. Mr. Henninger.

Econ. 240. Personnel Management. 0-0-3

Required of Textile seniors. Elective for Engineering students. Prerequisite: Econ. 102 and Soc. 102.

This course will follow as closely as possible Economics 340; subject-matter as related to a proper background for successful Personnel Management. Mr. Henninger.

Econ. 241. Traffic Management. 3-0-0

Required of seniors in Industrial Management and in Marketing. Prerequisite: Econ. 103.

Functions of traffic departments, shipping, transportation management, rates, etc. Mr. Henninger.

Econ. 242. Time Study. 0-3-0

Required of seniors in Industrial Management. Prerequisite: Econ. 102 or 103.

Analysis of shop operation in elements, and the determination of the time for each element; emphasis on factors affecting job specification, and wage rate setting. Mr. Henninger.

Econ. 256. Real Estate. 3-3-3

Prerequisite: Econ. 103.

Buying, selling, building, and managing real property; laws affecting property; real estate as a profession. Mr. Moen.

Econ. 270. Rural Law. 0-0-3

Elective. Prerequisite: Econ. 102 or 103.

Contracts, agency, sales, land transfers, mortgages, and other instruments, legal aspects of the business of farming. Mr. .....

Courses for Graduates and Advanced Undergraduates

Econ. 301. Accounting II. 3-3-3

Prerequisite: Econ. 201 and 6 hours in Economics.

Problems of asset valuation such as depreciation, replacements, fire losses, amortization, etc., found in all types of business organizations. Mr. Shulenberger.

Econ. 302. Modern Accounting Systems. 3-3-3

Required of seniors in Business Administration, Accounting Group. Prerequisite: Econ. 201.

Principles of system building, structure and expansion; individual studies of representative business systems. Mr. Shulenberger.

Econ. 303. Principles of Cost Accounting. 3-3-3

Required of seniors in Business Administration, Accounting Group. Prerequisite: Econ. 201.

Cost finding, material costs, labor costs, burden and overhead costs: cost accounting system for manufacturing and extractive industries. Mr. Leager.

Econ. 304. Auditing. 3-3-3

Elective. Prerequisite: Econ. 201.

Cases, records, working papers, verification, adjustment, composition, preparation, and rendition. Mr. Shulenberger.

Econ. 312. Statistical Method. 3-3-0

Required of seniors in Business Administration (two terms) and juniors in Agricultural Administration (one term). Prerequisite: Econ. 102, 103.

Statistical methods, statistical types, collection and analysis of statistical data. Mr. Leager.

Econ. 314. Business Statistics. 0-0-3

Required of seniors in Business Administration. Prerequisite: Econ. 312.

Statistical methods and data; price levels, the business cycle, and business barometers in forecasting business conditions. Mr. Leager.

Econ. 321. Principles of Money and Banking. 3-3-3

Analysis and research in the field of money and banking. Selected readings and reports. Mr. Moen.

Econ. 323. Business Finance II. 3-0-0

Required of seniors in Business Administration, Finance and Banking Group. Prerequisite: Econ. 223.

Financial Administration and policies as applied in Modern Business. Mr. Moen.

Econ. 324. Foreign Exchange and Trade. 0-0-3

Required of seniors in Business Administration, Finance and Marketing Groups. Prerequisite: Econ. 221.

Theory of foreign trade, commercial policies, and balance of international payments. Mr. Moen.

Econ. 325. Investments. 0-3-0

Required of seniors in Business Administration, Finance and Banking Groups. Prerequisite: Econ. 221.

Different types of investment securities and methods of judging them. Mr. Moen.

Econ. 326. Public Finance I. 0-3-0

Elective. Prerequisite: Econ. 103 and 6 additional credits in Economics.

Classes of income and expenditure; incidence of different classes of taxes. Mr. Moen.

Econ. 327. Public Finance II. 0-0-3

Elective. Prerequisite: Econ. 326.

A continuation course for Public Administration. Mr. Moen.

Econ. 330. Principles of Insurance. 0-0-3

Elective. Prerequisite: Econ. 103.

Risk is an element of all agricultural and industrial activity. Such risks as can be covered by insurance are discussed, with the appropriate form of insurance, e.g., employer's liability, workmen's compensation, fire, life, and other forms. Mr. Leager.

Econ. 338. Conservation of Natural Resources. 0-2-0

Elective. Prerequisite: Econ. 103 and 6 additional credits in Economics for students in Business Administration; senior standing for students in other curricula.

The extent, uses, rates of consumption, and probable exhaustibility of our most important resources; utilization for welfare of the race. Mr. Brown.

Econ. 340. Personnel Management. 0-3-3

Required of seniors in Business Administration, Industrial Management. Prerequisite: Econ. 103 and 12 additional credits in Economics and Sociology.

Students desiring to take this course are advised to take one or more of the following: Psychol. 238, Econ. 239, and Soc. 310.

Principles of effective management of men, including selection, progressive adjustment, and motivation of personnel in industry.

Mr. Henninger.

Courses for Graduates Only

Econ. 401. Advanced Economic Theory. 3-3-0

Prerequisite: Eighteen (18) credits in Economics.

Recent and current economic theory; principal schools of economists; theory of prices under the system of free enterprise. Mr. McNatt.

Econ. 402. History of Economic Doctrines. 0-0-3

Prerequisite: Econ. 401.

History of economic doctrines from the Mercantilists to the period of Ricardo. Mr. McNatt.

Econ. 415. The Economics of Distribution. 3-3-3

Prerequisite: Econ. 103 and 215.

An advanced study of theory and practice of economic distribution. Mr. Moen.

Econ. 424. Advanced Economic Statistics. 3-3-3

Prerequisite: Econ. 312 or equivalent.

Application of statistical methods to the solution of more complex agricultural and economic problems. Mr. Leager.

Econ. 430. Industrial Management—Advanced. 0-3-0

Prerequisite: Econ. 103 and 230, or graduation in Engineering.

Industrial problems and scientific systems, applied to textile, metal, and furniture trades. Individual assignments and analysis of definite situations. Mr. Henninger.

Econ. 439. Labor Problems—Advanced. 0-3-0

Prerequisite: Econ. 103, 239, and 9 credits in Sociology and 9 credits in Psychology.

Analysis of problems confronting organized and unorganized workers in all industries. Mr. Henninger.

Econ. 440. Personnel Management—Advanced. 0-0-3

Prerequisite: Econ. 103, 230, 340, and 439.

Methods of personnel management, differences between industries and between plants, and scientific training of personnel manager.

Mr. Henninger.

EDUCATION

For description of summer school (s) courses see Summer School Bulletin.

Courses for Undergraduates

Ed. 106. Industrial Arts. 3-3-3

Required in Industrial Arts curriculum.

Lectures, laboratory work, and visitations. Emphasis on wood, metal, electrical, and printing shop work as meeting needs of general shop teaching. Required as major or minor in Industrial Arts Education.

Mr. Boshart.

Courses for Advanced Undergraduates

Ed. 203. Educational Psychology. 3-3-0

Required of students in Education; elective for others.

The meaning of education, child development, problems of adjustment and educational guidance; problems of learning, motivation, interests, and the measurement of educational efficiency. Mr. Garrison.

Ed. 208. Visual Aids. 0-0-3

Required of students in Agricultural Education.

Prerequisite: junior standing.

Methods and technique of visual instruction; lettering; statistical illustrating; chart, graph, and poster-making; photography; lantern-slide making; projector operation, care and use. Designed for teachers and extension workers. Mr. Armstrong.

Ed. 232. Project Design, A, B. 0-3-3

Required in Industrial Arts. Prerequisite: M. E. 102 and 103.

The designing of projects suitable for the general industrial arts laboratory of the junior and senior high school or specialized class work. Suitable materials, types of construction, and utility of projects will be considered. Mr. Boshart.

Ed. 233. Practices in Industrial Arts Teaching, A, B. 0-3-3

Prerequisite: Ed. 232.

Designed to meet the needs of teachers and principals of schools where shop work and drawing are taught. Much attention will be given to the working out of suitable problems and the types of equipment best adapted for the work. Mr. Boshart.

Ed. 250. Trade and Job Analysis. 3-0-0

Elective.

Deals with the analysis of trades and jobs, endeavoring to determine how they may be broken up into units for teaching purposes. Will consider the trade demands of the worker and the essential materials to be used. Intended for students in Textiles and Engineering who expect to teach evening or day classes in vocational work. Mr. Boshart.

Ed. 260. Course Making and Lesson Planning. 3-0-0

Deals with the arrangement of subject matter into courses and lessons for instructional purposes. Consideration will be given to the preparation of outlines, job sheets, and the materials to be used in teaching of shop and related subjects. Intended for those who expect to teach in day and evening classes. Mr. Boshart.

Courses for Graduates and Advanced Undergraduates

Ed. 306. Principles of Teaching. 3-0-0

Required of seniors in Agr. Ed. Prerequisite: Ed. 203.

Principles of teaching related to job of teaching vocational agriculture; motivation, directing study, teaching technique, lesson planning.

Mr. Cook.

Ed. 307. Methods of Teaching Agriculture. 5-0-0

Required of students in Agricultural Education. Prerequisite: Ed. 203, 208, or equivalents, and at least 12 credits in Agriculture.

Organization of subject matter; teaching techniques; supervised practice; textbooks and reference material; Future Farmers of America; room arrangement and equipment. Mr. Cook.

Ed. 308. Observation and Directed Teaching. 0-5-0

Required of seniors in Agr. Ed. Prerequisite: Ed. 203, 306, 307, and at least 12 credits in Agriculture.

Observation and teaching vocational agriculture under supervision, participation in the varied activities of the teacher of vocational agriculture. Mr. Cook.

Ed. 311. Evening Classes and Community Work. 0-5-0

Required of seniors in Agr. Ed. Prerequisite: Ed. 203, 306, 307, and at least 12 credits in Agriculture.

Community activities of teachers of vocational agriculture, organization and teaching evening and part-time classes. Mr. Cook.

Ed. 312. Materials and Methods in Teaching Agriculture. 0-5-0

Required of seniors in Agr. Ed. Prerequisite: Ed. 203, 306, 307, and 12 credits in Agriculture.

Use of illustrative and actual materials in teaching vocational agriculture; collection and preservation of specimens; chart making; practice in use of materials in directed teaching. Mr. Armstrong.

Ed. 320. Vocational Guidance. 0-3-0 or 0-0-3

Required of students in Industrial Arts, and elective for others. Prerequisite: Ed. 203, 321, 332, or equivalent.

The course in vocational guidance is intended to give emphasis to the place of guidance in the school program. It will treat of the develop-

ment of educational and vocational guidance, its relation to personnel work, principles and practices of guidance and employment, child labor legislation, and forms and records for school use. Mr. Boshart.

Ed. 321. Vocational Education. 0-3-0

Required of students in Industrial Arts. Prerequisite: Ed. 203, 332, and 6 additional credits in Education.

This course dealing with the problems of vocational education is intended to give acquaintance with its underlying philosophy, its place in our education, the laws governing it, and the prevailing practices and administration. It is of particular interest to administrators and teachers who have or expect to have to do with the direction of educational work in Agriculture, Homemaking, Industry, and Commerce. It deals with all day, evening, part-time, and general continuation class work.

Mr. Boshart.

Ed. 322. Methods in Industrial Arts Teaching. 4-0-0

Required of seniors in Industrial Arts and those preparing to teach vocational classes in trades and industries.

The basic principles of teaching in the classroom or shop; selection and arrangement of material; lesson planning; and conduct of class work. Mr. Boshart.

Ed. 324. Occupational Studies. 0-0-3

Required of students of Industrial Arts and elective for others. Prerequisite: Ed. 320 and six additional hours in education.

A comprehensive study of the field of occupations. The work will consist of readings, reports, discussions, lectures, and visitations. Analysis of leading occupations will be made with the idea of selecting and preparing teaching units for related subject matter courses. Mr. Boshart.

Ed. 326. Secondary Education in Agriculture. 0-0-3

Prerequisite: Ed. 203 and 6 other credits in Education.

School organization in the United States with special reference to agricultural education, curricula; elimination; movements in guidance and character education, with particular reference to agricultural teaching.

Mr. Cook.

Ed. Ex. 330. Visual Instruction. 3-0-0 or 0-3-0 or 0-0-3

Ed. 331. Visual Aids in the Social Sciences. 0-0-3

Prerequisite: Ed. 203.

A study of materials, devices and procedures applicable to teaching the social sciences, including geography. Emphasis will be given to motivation, facilitating the learning process, and fixation. Various devices will be used by the class. Mr. Armstrong.

Ed. 332. Problems in Secondary Education. 0-0-3

Required of juniors in High School Teaching. Prerequisite: Ed. 203.

Historical perspective; issues in and special functions of secondary education; curriculum; different types of teaching; basic principles; systematic procedure. Mr. Showalter.

Ed. 333. Field Work in Secondary Education. 0-3-0

Required of seniors in High School Teaching. Prerequisite: Ed. 203.

Systematic study of physical and instructional factors in selected high schools. Mr. Showalter.

Ed. 338. Laboratory Practice in Science.

B.	**Botany**	2-2-0
Z.	**Zoology**	1-1-0
C.	**Chemistry**	1-1-1
P.	**Physics**	1-1-1

Five credits required of double majors in science teaching. Prerequisite: Ed. 332; approval of instructor.

Apprentice work in laboratory management and instruction.
Mr. Showalter and teachers of the respective sciences.

Ed. 339 to 343. Special Methods for High School Teachers.

Required of juniors or seniors in High School Teaching in the respective fields of specialization. Prerequisite: Ed. 332, approval of instructor.

For the respective teaching fields: determining influences in development; educational values and objectives; curriculum materials; teaching practices, including planning and testing.

Ed. 339. The Teaching of Science in the Secondary School. 3-0-0
Mr. Showalter.

Ed. 340. The Teaching of English in the Secondary School. 0-0-3
Mr. Clark.

Ed. 341. The Teaching of Mathematics in the Secondary School. 0-0-3
Mr. Mumford.

Ed. 342. The Teaching of History in the Secondary School. 3-0-0
Mr. Barnhardt.

Ed. 343. The Teaching of French in the Secondary School. 0-0-3
Mr. Hinkle.

Ed. 344. Observation and Directed Teaching. 0-6-0

Elective for students who desire a Class A certificate to teach in North Carolina high schools. Prerequisite: Ed. 332, 333; Special Methods; subject matter required for certification; approval of instructor.

Observation of and active participation in all phases of teacher activity; emphasis on systematic procedure to develop ability to study and work independently. Mr. Showalter and training teachers.

Ed. 350. Special Methods Laboratory. 0-3-0

Required of seniors in High School Teaching. Prerequisite: Ed. 332, approval of instructor.

Thorough study of the high school textbooks to be used in the respective subject matter fields.

Mr. Showalter and teachers of the respective subject matter fields.

Ed. Ex. s352. Theory of Industrial Arts. 3 credits

Ed. Ex. s354. Practical Arts Problems. 3 credits

Ed. s355. Art Studies in Industrial Art Problems. 1½ or 3 credits

Ed. 357. The Problems of the General and Unit Shops. 3-0-0

Intended for those who are teaching or expect to teach shop work and drawing. Its purpose is to acquaint students with the possibilities of the general shop as compared with those of the unit shop and to aid in setting up procedures for each type of shop under conditions where they can best function. Those taking this course should take parallel courses in shop instruction unless they have had considerable experience. Problems of organization, equipment, instruction sheets and their uses, and courses of study will be considered. Mr. Boshart.

Ed. s360. Special Problems in Teaching Agriculture. 3 credits

Ed. 377. Psychology of Secondary School Education. 0-0-3

Prerequisite: Ed. 203 and 6 credits in Education.

The Psychology of learning applied to secondary education; the educational growth of high school pupils. Mr. Garrison.

Ed. 381. Character Education. 0-0-3

Prerequisite: Twelve credits in Education.

Nature of the problem, needs for character training, present development, agencies responsible, theories of character development, results of investigations, materials, and methods for teachers. Mr. Cook.

Courses for Graduates Only

Ed. 403. Problems in Educational Psychology. 3-3-3

Prerequisite: Eighteen credits in Education and Psychology.

The nature, causes, and measurements of individual differences in relation to problems of education; the principles of learning, motivation and conditions of educational improvement; the application of psychological principles to mental and educational measurements. Mr. Garrison.

Ed. 410. Administration and Supervision of Vocational Education. 3-3-0

Prerequisite: Ed. 203, 320, 321, and 332.

Administration and supervisory problems of vocational work. Considers the practices and policies of Federal and State officers, organiza-

tions and administration of city and consolidated systems, and individual school departments for Vocational Education. For graduate students majoring in Education. Mr. Boshart.

Ed. 412. Occupational Counseling. 0-0-3

Prerequisite: Ed. 320, 321, or equivalent.

This course is intended for teachers of experience and those interested in the problems of guidance in school and life. Attention is given to group and individual counseling as it may be applied to the junior and senior high schools, colleges or placement offices, and to the procedures of conducting interviews and conferences. Information concerning occupational material will be organized, evaluated, and applied to type cases. The relation to personnel work will be considered as the functions of school and industry are studied. Mr. Boshart.

Ed. 416. Problems in Agricultural Teaching. 3-0-0 or 0-3-0 or 0-0-3

Prerequisite: Ed. 203, 307, and at least 12 other credits in Education and Agriculture. Experience in Agricultural Teaching will be accepted in lieu of Ed. 307.

Investigations, reports, and a critical evaluation of present practices with constructive remedies; course adapted to individual interests and needs. Mr. Cook.

Ed. 417. Principles of Agricultural Education. 3-0-0 or 0-3-0 or 0-0-3

Prerequisite: Eighteen credits in Education and Agriculture. Permission to register.

Principles and practices in Agricultural Education in the light of educational research and of changing rural conditions. Mr. Cook.

Ed. 420. Agricultural Education Seminar. 1-1-1

Prerequisite: Eighteen credits in Education.

A critical review of current articles and books of interest to students of agricultural education. Mr. Cook, Mr. Armstrong.

Ed. 421. Research in Education. 3-3-3

The student will make a study of one or more research problems under the supervision of some member of the staff of the School of Education. The course will be selected on the recommendation of the member of the faculty with whom the student plans to carry on the study.

Staff in Education.

ELECTRICAL ENGINEERING

Courses for Undergraduates

E. E. 101. Electrical Engineering Fundamentals. 0-3-3

Required of sophomores in E. E. Concurrent with Phys. 104.

Fundamental laws of electric, magnetic and dielectric circuits; problem drill. Mr. Browne.

E. E. 105. Electrical Equipment of Buildings. 0-0-3

Required of juniors in Construction Engineering and seniors in Architectural Engineering. Prerequisite: Physics 104.

Wiring of buildings for light and power; selection of motors and lighting equipment. Mr. Browne, Mr. Keever, Mr. Glenn.

E. E. 110. Electric Shop. 0-0-3

A course offered for students in Vocational Education. Practical electrical problems suitable for secondary school; electrical shop equipment.

Credit is allowed only for students in the Department of Education.

Courses for Advanced Undergraduates

E. E. 201. Electrical Engineering. 3-3-3

Required of juniors in E. E. Prerequisite: E. E. 101.

Principles, performance and characteristics of direct current apparatus, electronics, theory of periodic currents, alternating current circuits and systems. Mr. Fouraker, Mr. Brown, Mr. Keever.

E. E. 202. Electrical Engineering Problems. 1-1-1

Required of juniors in E. E. Concurrent with E. E. 201.

Supervised problem drill. Mr. Fouraker.

E. E. 203. Electrical Engineering Laboratory. 2-2-2

Required of juniors in E. E. Concurrent with E. E. 201.

A laboratory course coördinated with E. E. 201.

Mr. Pearsall, Mr. Keever, Mr. Brown, Mr. Glenn.

E. E. 220. Elements of Electrical Engineering I. 3-3-0 or 0-3-3

Required of juniors in Chem. E., C. E., H. E., Constr. E., and San. E., and of seniors in Cer. E., Geol. E., and Min. E., and in Industrial Management. Prerequisite: Math. 202, Phys. 104.

Principles, characteristics and operation of electrical equipment and systems. Mr. Pearsall, Mr. Keever, Mr. Glenn.

E. E. 230. Elements of Electrical Engineering II. 4-4-4

Required of seniors in M. E. and of juniors in Industrial Engineering. Prerequisite: Math. 203, Phys. 104.

Principles, characteristics, and operation of electric equipment.

Mr. Pearsall, Mr. Keever, Mr. Glenn.

Courses for Graduates and Advanced Undergraduates

E. E. 301. Electric Distribution. 0-0-3

Required of seniors in E. E. Prerequisite: E. E. 201.

Low voltage distribution systems. Mr. Browne.

E. E. 302. Alternating Current Machinery. 4-4-0

Required of seniors in E. E. Prerequisite: E. E. 201.

Principles and characteristics of alternating current machinery.

Mr. Fouraker, Mr. Brown.

E. E. 303. Electrical Engineering Laboratory. 2-2-2

Required of seniors in E. E. Concurrent with E. E. 301.

A laboratory course coördinated with classroom work.

Mr. Fouraker, Mr. Pearsall, Mr. Keever, Mr. Brown.

E. E. 304. Electric Transmission. 0-0-4

Prerequisite: E. E. 302.

Theory and characteristics of electric circuits for high tension transmission of power; circuits for communication; radio and carrier current systems. Mr. Fouraker, Mr. Brown.

E. E. 305. Electric Power Applications (Optional with E. E. 306). 3-3-3

Prerequisite: E. E. 201.

Selection of electrical equipment for industrial applications, control equipment; electric traction, electric power plants.

Mr. Browne, Mr. Fouraker.

E. E. 306. Electric Communication (Optional with E. E. 305). 3-3-3

Prerequisite: E. E. 201, 202.

Circuits and equipment for wire communication; radio and carrier current systems. Mr. Fouraker.

E. E. 307. Illumination. 3-3-0

Required of seniors in E. E. Prerequisite: E. E. 201, 202.

Characteristics of electric lamps; electric lighting systems.

Mr. Browne.

Courses for Graduates Only

E. E. 401. Fundamental Principles in Electrical Engineering. 3-3-3

Prerequisite: E. E. 301, 302.

Theory of the more difficult problems in electrical engineering, emphasis being placed upon the fundamental principles.

Mr. Browne, Mr. Fouraker.

E. E. 402. Electric Transmission—Advanced. 3-3-3

Prerequisite: E. E. 301, 303.

Calculation of constants, networks, mechanical principles, transmission lines, interference and transients in lumped circuits. Mr. Fouraker.

E. E. 403. Electrical Engineering Research. 3-3-3

Prerequisite: Graduation in electrical engineering.

Original investigation in the field of electrical engineering.

Mr. Browne, Mr. Fouraker.

ENGLISH

Courses for Undergraduates

Eng. 101. Composition. 3-3-3

Required of all freshmen.

Illustrative readings; exercises in types of composition; long paper each term; collateral reading. Conferences.

Messrs. Clark, Paget, Hartley, Harrison, Wynn, Ladu, Fountain, Marshall, Wynne, Lyell, and Shelley.

Eng. 102. Composition. 0-3-3

The course repeats the work of English 101 for two terms beginning with the second term. Mr. Clark and staff.

Eng. 120. Business English. 3-0-0 or 0-3-0 or 0-0-3

Required of sophomores in Engineering. Prerequisite: Eng. 101.

Practical application of the principles of composition; types of letters; form, style, and tone of effective correspondence; intensive word study. Conferences. Mr. Wilson.

Eng. 150. Principles of Journalism. 0-3-0

Required of students intending to take other courses in Journalism.

Prerequisite: Eng. 101 or equivalent.

Newspaper methods and organization; simple forms of news writing; collateral readings. Mr. Wynn.

Eng. 160. Public Speaking. 3-0-0 or 0-3-0 or 0-0-3

Required of sophomores in Engineering. Elective for other students. Prerequisite: Eng. 101 or equivalent.

Speech organization and effective delivery; extempore speeches; audience motivation and use of motivating process; acquisition of ease before audience. Messrs. Paget and Fountain.

Eng. 162. Speech Adjustment. 0-0-2

Elective. Prerequisite: Eng. 101.

Poise and pleasing communicative habits in all group contacts; habits of speech, posture, action, and language. Mr. Paget.

Courses for Advanced Undergraduates

Eng. 220. Survey of English Literature. 3-3-3

Elective. Prerequisite: Eng. 101.

Masterpieces in their literary and historical settings. Parallel readings for reports and discussions. Messrs. Clark, Ladu, and Hartley.

Eng. 221. Survey of American Literature. 3-3-0

Elective. Prerequisite: Eng. 101.

Masterpieces and outstanding types in their historical settings. Parallel readings for reports and discussions. Mr. Ladu.

Eng. 223. The English Novel. 3-0-0

Elective. Prerequisite: Eng. 101.

Its English origin, structural development, and historical and social settings; works of greater novelists and essential characteristics; the novel today; the short story. Mr. Hartley.

Eng. 226. Modern Drama. 0-3-0

Elective. Prerequisite: Eng. 101.

Modern plays, beginning with Ibsen; contemporary English and American productions. Mr. Ladu.

Eng. 227. The Development of the Drama. 0-0-3

Elective. Prerequisite: Eng. 101.

Origin, progress, and influence; plot, characterization, and interpretation of certain readings. Mr. Clark.

Eng. 233. Southern Writers. 3-0-0

Elective. Prerequisite: Eng. 101.

Important writers, with intensive study of Poe, W. G. Simms, Sidney Lanier, Joel Chandler Harris, George W. Cable, O. Henry, Ellen Glasgow, James Branch Cabell. (Not given in 1936-37.) Mr. Ladu.

Eng. 235. Victorian Poetry. 0-3-0

Elective. Prerequisite: Eng. 101.

Principal poets of the Victorian era; emphasis on Tennyson and Browning. (Not given in 1936-37.) Mr. Hartley.

Eng. 236. Victorian Prose. 0-0-3

Elective. Prerequisite: Eng. 101.

Readings in Landor, Macaulay, Carlyle, Ruskin, Newman, Arnold, Huxley, Pater, Stevenson, and others. Mr. Clark.

Eng. 238. The Bible as Literature. 0-0-3

Elective. Prerequisite: Eng. 101.

Selected books of the Old and New Testaments as literary and historical documents. (King James Version.) Mr. Ladu.

Eng. 254. Agricultural and Industrial News Writing. 3-0-0

Elective. Prerequisite: Eng. 101.

News-gathering and news-writing; feature articles; lectures; collateral readings. Mr. Wynn.

Eng. Ex. 261. Extempore Speaking. 3 credits

For extension only. Mr. Paget.

Eng. 269. Parliamentary Practice. 0-2-0

Elective. Not to be counted toward the fulfillment of any requirement in English. Prerequisite: Eng. 101 or equivalent.

Rules and customs of assemblies, including organization, motions; participation in and conduct of meetings; parliamentary strategy.

Mr. Paget.

Courses for Graduates and Advanced Undergraduates

Eng. 319. The Essay. 0-3-0

Elective for students in all schools. Prerequisite: Eng. 101 and 3 additional credits in English.

The writing and appreciation of literary, non-technical essays; papers and one longer essay; conferences. Mr. Harrison.

Eng. 320. The Short Story. 0-0-3

Elective for students in all schools. Prerequisite: Eng. 101 and 3 additional credits in English.

Development, structure, types, and style of the present-day short story; writing narratives of fact and of fiction; conferences. Mr. Harrison.

Eng. 324. Technical Writing. 3-0-0 or 0-3-0 or 0-0-3

Required of juniors or seniors in Engineering. Elective for other students.

Prerequisite: Eng. 101.

Principles of writing reports and other technical papers; illustrative readings; frequent short papers; a term paper. Conferences.

Mr. Harrison.

Eng. 325. Advanced Technical Writing. 3-0-0

Elective. Prerequisite: Eng. 324 or equivalent.

Content, structure, and style of technical reports, of theses for advanced degrees, and of scientific papers; models in current periodicals and in separate monographs. Mr. Harrison.

Eng. 330. Shakespeare. 3-0-0

Elective. Prerequisite: Eng. 101 and three additional credits in English.

An analysis of principal plays. Reports on parallel readings.

Mr. Clark.

Eng. 332. The Romantic Period. 0-3-0

Elective. Prerequisite: Eng. 101 and three additional credits in English.

Representative poems of Gray, Blake, Burns, Wordsworth, Coleridge, Scott, Southey, Byron, Shelley, and Keats. Mr. Clark.

Eng. 333. Non-Dramatic Literature of English Renaissance. 0-0-3

Elective. Prerequisite: Eng. 101 and Eng. 220 or its equivalent.

Development of humanistic spirit in the poetry of the period between 1540 and 1625. (Not given, 1936-37.) Mr. Ladu.

Eng. 334. The Eighteenth Century. 3-0-0

Elective. Prerequisite: Eng. 101 and Eng. 220 or its equivalent.

English literature of the period from 1700 to 1770; content and critical importance emphasized. Mr. Ladu.

Eng. 335. Milton. 0-0-3

Elective. Prerequisite: Eng. 101 and Eng. 220 or its equivalent.

Major and minor poems, with limited treatment of prose.

Mr. Hartley.

Eng. 336. The Seventeenth Century. 0-3-0

Principal types of literature of the Restoration, preceded by few of major writers of early part of century. Mr. Ladu.

Eng. 337. Contemporary American Literature. 0-0-3

Prerequisite: Eng. 101 and three additional credits in English.

Study of leading writers of present century, and an attempt to interpret works against social background of period. Mr. Ladu.

Eng. 352. Feature and Editorial Writing. 0-3-3

Prerequisite: Eng. 150 and special permission.

Analysis of feature story, feature articles, and editorials; constant practice in writing these forms; class discussions; collateral readings.

Mr. Wynn.

Eng. 361. Argumentation and Debate. 0-3-0

Prerequisite: Eng. 160 or equivalent.

Analysis, brief-drawing and evidence, and methods of proof and refutation; fundamentals of conviction; humanness and forcefulness; extempore speeches, debates, and discussions. Mr. Paget.

Eng. 362. Persuasion. 3-0-0

Prerequisite: Eng. 160 or equivalent.

Psychological forces, methods of conciliation, securing and holding attention, and winning response; extempore speeches and discussions.

Mr. Paget.

Eng. 363. Public Address. 0-0-3

Prerequisite: Eng. 160 or equivalent.

Public addresses for special occasions, including announcement, speech of introduction, committee-room speech, personal conferences, after-dinner speech, speech at professional convention, political speech, college oration, formal sales talk. Mr. Paget.

Eng. 364. Play Production. 0-0-3

Elective. Prerequisites: Eng. 101 and all sophomore requirements in English.

Elements of effective dramatic production, including acting, setting, lighting, make-up, voice and diction, pronunciation, selection of plays, directing, and creative dramatics. Mr. Paget.

FIELD CROPS—AGRONOMY

F. C. 101. General Field Crops. 0-0-3

Required of sophomores in Agriculture.

A standard introductory course. Emphasis is given to the economic production of field crops as used in well-balanced cropping systems. Mr. Darst, Mr. Cotner.

F. C. 105. Cotton. 3-0-0

Required of sophomores in Textile.

Lectures and recitations on history, botany, and physiology of the cotton plant; comparative study of varieties; microscopic studies of the fiber and a study of the physical properties of the fiber as it affects milling quality. Mr. Cotner.

Courses for Advanced Undergraduates

F. C. 201. Cereal Crops. 0-4-0

Prerequisite: F. C. 101. Required of juniors in Agronomy.

Advanced study of the various factors that should be considered in the economic production of corn and small grains. Mr. Darst.

F. C. 205. Legumes and Grasses. 0-0-4

Prerequisite: F. C. 101. Required of juniors in Agronomy.

Advanced study of legumes and grasses as to their adaptation and uses. Emphasis is placed on their economic use in crop and livestock farming. Mr. Darst, Mr. Cotner.

F. C. s206. Seed Judging and Crop Identification. 3 credits

Prerequisite: F. C. 101.

Advanced study of quality in crop seeds. The identification and adaptation of crop varieties of economic importance. Mr. Darst.

F. C. 210. Cotton Production. 0-0-3

Prerequisite: F. C. 101.

This course, or Agronomy 215, required of juniors in General Agriculture.

Lectures and recitations on history, production, adaptation, type, and varieties; cultivation, harvesting, grading, and marketing. Laboratory consists of variety studies and the classing of cotton lint. Mr. Cotner.

F. C. 215. Tobacco Production. 0-3-0

Prerequisite: F. C. 101.

This course, or Agronomy 210, required of juniors in General Agriculture.

Lectures and recitations on history, production, adaptation, type, and varieties; cultivation, harvesting, grading, and marketing. Laboratory consists of variety studies and the grading of tobacco. Mr. Cotner.

F. C. 220. Cotton Classing I. 0-3-0

Elective for juniors or seniors.

A study of the universal standards of American upland cotton for grade and staple. Factors that determine grade and how to improve them. Practice will consist of classing three to five thousand samples of North Carolina cotton. Mr. Cotner.

F. C. 225. Cotton Classing II. 0-3-0

Required of sophomores in Textile Manufacturing, Chemistry and Dyeing, and Designing.

A study of the universal standards of American upland cotton for grade and staple. Factors that determine grade and their relative value. Practice will consist of classing and stapling three to five thousand samples of cotton. Mr. Cotner.

Courses for Graduates and Advanced Undergraduates

F. C. 302. Advanced Cotton Classing. 3-3-3

Prerequisite: F. C. 101 or 105, 225, or 220.

For men who expect to become specialists in cotton classing.

This course will prepare men to take the U. S. Civil Service examination for cotton classing. Mr. Cotner.

F. C. 303. Advanced Cotton Production. 3-3-3

Prerequisite: F. C. 210.

Advanced study of cotton production problems. Mr. Cotner.

F. C. 305. Crop Breeding. 3-3-3

Special problems in inheritance and methods of investigation. A student may select a problem in any phase of plant breeding. Mr. Cotner.

F. C. 325. Seed Certification Problems. 0-3-0

Prerequisite: F. C. 101.

A study of standards of quality in field crops for certification. Mr. Darst.

F. C. 330. Seed Judging. 3-0-0

Elective for juniors and seniors. Prerequisite: F. C. 101, Botany 101 and 102.

Advanced study of quality in crop seeds and the standards for seed certification. Arranging and judging of crop exhibits. Mr. Darst.

F. C. 332. Market Grading of Field Crops. 3-0-0

Elective for juniors and seniors. Prerequisite: F. C. 101, Botany 101, 102.

A study and application of the Federal Standard for Market grades as applied to field crops. Mr. Darst.

F. C. 334. Taxonomy of Field Crops. 3-0-0

Elective for juniors and seniors. Prerequisite: F. C. 101, Botany 101, 102.

A study of the origin, botanical classification, identification and adaptation of the commercially important crops and their varieties grown in America. Mr. Darst.

F. C. 340. Experimental Methods. 0-3-0

Elective for juniors and seniors.

A study of the development in agricultural experimental work and the experimental technique as developed to date by soil fertility, crop and crop breeding tests and demonstrations. Mr. Darst.

F. C. 345. Plant Breeding. 3-0-0

Prerequisite: Zoology 304.

Lectures, field and laboratory exercises, including methods and principles of plant breeding. Mr. Cotner.

F. C. 350. Senior Seminar. 1-1-1

Prerequisite: Twelve credit hours in Field Crops. Elective for seniors.

Scientific articles, progress reports in research and special problems of interest to agronomists will be assigned, and reviewed with discussion by students and members of the Agronomy Staff.

Mr. Darst, Mr. Cotner.

F. C. 351. Crop Research. 3-3-3

Prerequisite: Twelve credit hours in Field Crops. Elective for seniors.

A study of research and demonstrations in crops. Emphasis will be placed on experimental tests in progress. Crops for special consideration will be assigned. Mr. Darst, Mr. Cotner.

Courses for Graduates Only

F. C. 401. Crop Research. 3-3-3

Prerequisite: Eighteen credit hours in Field Crops.

A study of special problems and methods of investigation. A student may select a problem in any phase of crop production.

Mr. Darst, Mr. Cotner.

F. C. 404. Advanced Tobacco Production. 3-3-3

Prerequisite: F. C. 215 and ten additional credit hours in Field Crops.

Advanced study of tobacco production problems. Mr. Cotner.

F. C. 410. Seminar. 1-1-1

Prerequisite: Eighteen credit hours in Field Crops.

Scientific articles, progress reports in research and special problems of interest to Agronomists will be assigned, reviewed, and discussed by students and members of the Agronomy Staff. Mr. Darst, Mr. Cotner.

F. C. 415. Plant Breeding Research. 3-3-3

Prerequisite: F. C. 345.

Inheritance problems of the plants. Available during any season appropriate to the study of the particular crop. Mr. Cotner.

FORESTRY

Courses for Undergraduates

For. 101. Elementary Forestry. 1-1-1

Required of freshmen in Forestry.

Study of the nature and development of forests of the world, with special study of the forests of the United States. A correlation of all sciences required in forestry. Field trips are included. Mr. Hofmann.

For. 102. Wood Technology. 0-3-0

Required of sophomores in Forestry. Prerequisite: Bot. 101, 102, 204.

Microscopic slides of the conifers and broad-leaved trees are studied in order to determine the occurrence, form, and structure of the wood elements. Identification by means of the hand lens is especially emphasized. Mr. Slocum.

For. 103. Timber Physics. 0-0-3

Required of sophomores in Forestry. Prerequisite: For. 104.

Mechanical properties of wood. Strength tests. Methods of testing. Growth conditions that produce the best timber for specific purpose.

Mr. Slocum.

For. 104. Principles of Forestry. 3-0-0

Elective for junior and senior students not in Forestry.

Forest conditions in the United States and the relation of the forest problems to other fields of industry. World forests as related to local and national problems. Mr. Slocum.

Courses for Advanced Undergraduates

For. 201, 202. Mensuration I, II. 3-3-0

Required of juniors in Forestry. Prerequisite: Math. 100 A, B, C, Bot. 207.

The measurement of timber, both standing and felled; log rules, form factors, stem analysis and growth.

Methods of making volume, growth, and stand tables. Increment and yield studies.

Development of stand and yield tables from field data. Timber surveys. Mr. Slocum.

For. s203. Mensuration III. 3 credits.

Junior summer camp. Prerequisite: For. 201.

Field data for stand and yield tables, stem analysis and timber surveys. Mr. Slocum, Mr. Miller.

For. 204. Silviculture I. 3-0-0

Required of juniors in Forestry. Prerequisite: Bot. 207.

Primary and secondary factors of tree growth and distribution. Forest regions, sites, stands, and types. Mr. Miller.

For. 205. Silviculture II. 0-3-0

Required of juniors in Forestry. Prerequisite: For. 204.

Production, collection, extraction, storage, and planting of forest tree seeds. Mr. Slocum.

For. 206. Forest Products. 3-0-0

Required of seniors in Forestry. Prerequisite: For. 204.

A study of the source and method of obtaining derived and manufactured products other than timber. Mr. Wyman.

For. 207. Forest Utilization. 0-0-3

Required of seniors in Forestry. Prerequisite: For. 206.

The problems of more complete utilization of our forest resources. Utilization of present waste in commercial practice. Mr. Wyman.

For. 208. Timber Preservation. 3-0-0

Elective for juniors in Forestry. Prerequisite: For. 102.

Lumber and timber preservations and their use. Methods of preservation. Relation of preservation to forestry and industry. Mr. Slocum.

For. s211. Dendrology. 3 credits.

Sophomore summer camp. Prerequisite: Bot. 207.

Identification and study of trees in Piedmont, Coastal and Mountain sections of North Carolina. Mr. Slocum, Mr. Miller.

For. s212. Silviculture. 3 credits.

Junior summer camp. Prerequisite: For. 202, 204.

Study of growth and development of forest stands.

Mr. Slocum, Mr. Miller.

Courses for Graduates and Advanced Undergraduates

For. 301. Silviculture III. 3-0-0

Required of seniors in Forestry. Prerequisite: For. 205.

The foundations and developments of silviculture on an ecological basis. The application of silvics and silviculture in the forests of the United States. Mr. Miller.

For. 302. Silviculture IV. 0-3-0

Required of seniors in Forestry. Prerequisite: For. 301.

Methods of cutting to secure natural regeneration and their application. Intermediate cuttings and their effect on the stand. Protection.

Mr. Miller.

For. 303. Logging. 3-0-0

Required of seniors in Forestry. Prerequisite: C. E. 103, For. 205.

Methods and machinery used in the logging industry. Transportation of logs. Logging costs. Application of methods to specific conditions. All forest regions are covered, discussing the problems of each.

Mr. Wyman.

For. 304. Lumbering. 0-3-0

Required of seniors in Forestry. Prerequisite: For. 303.

The manufacture and remanufacture, transportation and handling of lumber. Grades and grading of lumber. Mr. Wyman.

For. 305. Seasoning. 0-0-3

Required of seniors in Forestry. Prerequisite: For. 304.

Air-seasoning and kiln-drying of lumber. Kiln construction and operation. Kiln- and air-seasoning defects and their control. Mr. Wyman.

For. 306, 307. Forest Management. 3-3-0

Required of seniors in Forestry. Prerequisite: For. 203, 205.

The principles of management of timber lands for economic returns. The normal forest is taken as the ideal. The application of regulation methods to the forest. A typical working circle as developed by the United States Forest Service is studied for each forest region.

Mr. Hofmann.

For. 308. Forest Finance. 0-3-0

Prerequisite: For. 201, 204.

A discussion of forests as investments, considering interest, carrying charges, financial maturity, and relation of intermediate to final and net incomes. Forest taxation, hazards in forest investments, and forest insurance. Mr. Wyman.

For. 309. Timber Appraisal. 0-0-3

Required of seniors in Forestry. Prerequisite: For. 301, 308.

Field and office methods of valuing timber lands, with special reference to stumpage appraisal; the determination of damages to timber and forest property by fire. Mr. Wyman.

For. 310. Seminar. 0-2-0

Required of seniors in Forestry.

A round-table discussion of forestry problems, trends of development in forestry matters and related sciences. Forestry Faculty.

For. 311. Methods of Research in Forestry. 0-0-3

Required of seniors in Forestry.

Methods of research used by the United States Forest Service, experiment stations, the Madison Laboratory, and State and private research organizations. Mr. Miller.

For. 312. Forest Management Problems. 0-0-3

Required of seniors in Forest Management.

The student must select some specific area on which all the phases of management may be worked out. Mr. Hofmann.

For. 313. Advanced Silviculture Problems. 3-3-3

Elective for seniors, time arranged.

Assigned problems or research experiments to be carried out to completion by the student. A written report of procedure, and results will be required. Mr. Miller.

For. 314. Advanced Logging Problems. 3-3-3

Elective for seniors; time arranged.

Assigned or selected problems in logging in specified regions. A complete written report required for credit. Mr. Wyman.

For. 315. Advanced Manufacturing. 3-3-3

Elective for seniors; time arranged.

Assigned or selected problems applying to the manufacture or remanufacture of lumber. A complete written report required for credit. Mr. Wyman.

For. 316. Advanced Utilization Problems. 3-3-3

Elective for seniors; time arranged.

Assigned or selected problems dealing with some special phase of the utilization of forest resources. A complete written report required for credit. Mr. Wyman.

Courses for Graduates Only

For. 401. Forest Valuation. 3-3-3

The student must plan, organize, and conduct, under general supervision, an important research project in one of the fields of valuation. Mr. Wyman.

For. 402. Problems in Research. 3-3-3

Specific forestry problems that will furnish material for a thesis. Mr. Hofmann.

GEOLOGY

Courses for Undergraduates

Geol. 101. Earth History. 3 or 3 or 3

Elective for freshmen and sophomores in General Science. Not to be taken after Geol. 120 or 125.

Introductory course in general geology: changes in the earth, and underlying physical and life processes. Mr. Stuckey.

Geol. 120. Physical Geology. 4-0-0 or 0-0-4

Required of freshmen in Basic Agriculture, of sophomores in Forestry and Landscape Architecture, of teachers of Agriculture, and of Science teachers in Education.

Physical Geology as related to forces acting in and on the earth, and materials of the earth's crust. Mr. Stuckey, Mr. Parker.

Geol. 125. Historical Geology. 0-3-0

Prerequisite: Geol. 120 or 201.

Required of sophomores in Geological Engineering and of Science teachers in Education.

Sequence of events in development of the geology of the North American Continent. Mr. Parker.

Courses for Advanced Undergraduates

Geol. 201. Engineering Geology. 3-0-0 or 0-0-3

Required of sophomores in Agricultural, Ceramic and Geological Engineering, and of juniors in Civil, Highway, and Sanitary Engineering.

The principles of general geology and their application to engineering problems. Mr. Stuckey.

Geol. 205. Physiography. 0-0-3

Required of juniors in Geological Engineering and of History and other Social Science teachers in Education.

Evolution of the physical features of the earth and the agencies which influence their development. Mr. Stuckey.

Geol. 207. Ex. Physical Geography. 3-3-0

A. The processes and forces involved in the development of land forms.

B. The physiographic provinces of the United States and their importance. Some special study of the physical geography of North Carolina. Mr. Stuckey.

Geol. 230. Mineralogy. 3-0-0 or 0-0-3

Required of sophomores in Ceramic Engineering, and of juniors in Chemistry, Chemical Engineering, and Geological Engineering.

Crystallography, and Physical and Chemical Mineralogy.
Mr. Stuckey.

Geol. 235. Advanced Mineralogy. 0-3-0

Prerequisite: Geol. 230.

Required of juniors in Ceramic and Geological Engineering.

Thermal Mineralogy. Special attention to the thermal and chemical properties of a larger group of minerals. Blowpipe analyses.
Mr. Stuckey.

Geol. 240. Mineral Industries. 0-3-0

Prerequisite: Geol. 201 or 230.

Required of seniors in Chemical Engineering.

The occurrence, production and utilization of minerals and mineral resources. Mr. Parker.

Geol. 250. Structural Geology. 0-3-0

Prerequisite: Geol. 120 or 201.

The arrangement and deformation of the different rock masses composing the earth's crust. Mr. Parker.

Geol. 280. Geology and Mineral Resources of North Carolina. 3-0-0

Prerequisite: Geol. 101 or 120.

Physical geography, general geology, common rocks and minerals, and mine and quarry products of the State. Mr. Stuckey.

Geol. 291s. Geology of North Carolina. Summer term, 9 credits

Prerequisite: Geol. 120.

Mines, quarries, mineral and clay deposits visited and studied; geological formations in different parts of the State; making of geological maps. Mr. Stuckey.

Courses for Graduates and Advanced Undergraduates

Geol. 301. Optical Mineralogy. 3-3-3

Prerequisite: Geol. 230, and Physics 101 or 104.

Required of seniors in Ceramic and Geological Engineering.

Theory of light as applied to the polarizing microscope, practice in determining minerals in thin sections and by immersion methods.

Mr. Stuckey.

Geol. 303. Petrology. 3-0-0

Prerequisite: Geol. 120 or 201 and General Chemistry.

Required of seniors in Geological Engineering.

Materials of the earth's crust; rock-forming minerals; identification, origin, classification, and distribution of rocks; important rocks for building and ornamental purposes. Mr. Parker.

Geol. 305. Economic Geology. Non-Metals. 0-3-0

Prerequisite: Geol. 120, 230 and Chemistry 101, 103, 105.

Required of seniors in Geological Engineering.

Mode of occurrence, association, origin, and uses of non-metallic minerals. Mr. Stuckey.

Geol. 306. Economic Geology. Metals. 0-0-3

Prerequisite: Geol. 120, 230 and Chemistry 101, 103, 105.

Required of seniors in Geological Engineering.

Mode of occurrence, association, origin, and uses of leading metal-bearing minerals. Mr. Stuckey.

Geol. 320. Geological Research. 3-3-3

Prerequisite: 9 credits in Geology.

Lectures, reading assignments, and reports. Special work in geology or petrography to meet the needs of the students. Mr. Stuckey.

HIGHWAY ENGINEERING

Courses for Advanced Undergraduates

H. E. 201. Highway Engineering I. 0-3-3

Required of juniors in C. E. and H. E.

History, economics and administration of highways; construction and maintenance of highways; field and office methods; grading and drainage.

Mr. Tucker.

H. E. 204. Materials Testing Laboratory. 1-1-0 or 0-1-1

Required of seniors in C. E., H. E., Constr. E., San. E., and one term only for juniors in A. E. and Cer. E.

The testing of materials used in construction. For the students in Civil and Highway Engineering, emphasis is placed on those materials

used in road construction; for the students in Architectural and Construction Engineering, emphasis is placed on those materials used in the building industry. Mr. Tucker.

Courses for Graduates and Advanced Undergraduates

H. E. 301. Highway Engineering II. 3-3-0

Required of seniors in H. E.

The economic location of highways; design and construction of high-type pavements; administration of city streets. Mr. Tucker.

H. E. 302. Transportation. 0-0-3

Required of seniors in C. E. and H. E.

The transportation systems; development and uses; operation and maintenance; control and methods of taxation. Mr. Tucker.

H. E. 303. Highway Office Practice and Design. 1-1-0

Required of seniors in H. E.

The preparation of road plans, the calculation of yardage and balancing of quantities; the design of sections; plans for drainage structures and short span bridges. Mr. Tucker.

Courses for Graduates Only

H. E. 401. Highway Research. 3-3-3

Prerequisite: Eighteen term credits in H. E.

A study of the important research projects in the field of highway transport or that of highway engineering. The first term is usually given to the preparation of a bibliography of highway research projects; the second term is devoted to the preparation of papers on the results of specified research projects; while the third term is devoted to original research and investigation. Mr. Tucker.

HISTORY AND GOVERNMENT

Courses for Undergraduates

Hist. 101. Economic History. 3-3-3

An analytical examination of the important changes in the organization of European society and the forces which produced these changes during the periods of expansion and industrialization, as a background for a general treatment of the agricultural, industrial, and commercial development of the United States. Mr. Bauerlein, Mr. Seegers.

Hist. 104. World History. 2-2-2

Required of freshmen or sophomores who do not take Military Science.

A general survey of the development of institutions and culture in the Western world. Mr. Barnhardt.

Courses for Advanced Undergraduates

Gov. 200. American Government. 3-3-3

Elective.

The organization and activities of national, state, and local governments; party politics; economic, social, and legal factors of government.

Mr. Lockmiller.

Gov. 201. Modern Governments. 0-3-0

Elective. Prerequisite: Gov. 200.

A comparative study of the governments of England, France, Germany, Italy, Russia, and other countries to be selected. Mr. Barnhardt.

Hist. 204. History of Modern and Contemporary Europe. 3-3-3

Elective. Prerequisite: Hist. 101.

Renaissance and reformation; agricultural, industrial, and commercial revolutions; dynastic and colonial rivalries the French Revolution and reaction following 1815; spread of democracy and nationalism; modern agriculture, industry, commerce, labor, and tariff; the expansion of Europe and the background of the World War; the war and problems of post-war Europe. Mr. Barnhardt.

Courses for Graduates and Advanced Undergraduates

Gov. 300. American Political Parties. 0-3-0

Elective. Prerequisite: Gov. 200.

The origin and development of political parties in the United States, their functions, organizations, finance, campaign methods, and elections. (Not offered in 1936-37.) Mr. .....

Hist. 301. History of the United States. 3-3-3

Prerequisite: Hist. 101.

A chronological treatment of the political, diplomatic, and constitutional history of the United States in the light of its economic and social significance. Mr. Bauerlein.

Hist. 303. North Carolina History. 0-0-3

Prerequisite: Hist. 101, 301, and 302.

A general survey of the political, social, and economic history of North Carolina, with special emphasis on the nineteenth and twentieth centuries.

Mr. Barnhardt.

Hist. 307. Economic and Social History of the South. 3-3-3

Elective. Prerequisite: Hist. 101, 301, and 302.

Intensive study of the economic and social history of the Southern States. Mr. Lockmiller.

Hist. 310. American Biography. 0-3-0

Elective. Prerequisite: Hist. 101 and six hours additional History.

Representative men and women in American politics, law, religion, agriculture, industry, commerce, science, literature, and art. (Not offered in 1936-37.) Mr. .....

Hist. 318. Economic and Social History of Agriculture. 0-0-3

Required of seniors in Agricultural Administration; elective for others. Prerequisite: Hist. 101 and six additional hours in History.

Influence of agriculture on national and world issues; the economic and social status of the farmer, with special emphasis on the United States. Mr. Seegers.

Hist. Ex. 320. History of Modern England. 3 credits

Survey of English political, social, economic, and diplomatic history, with emphasis on the last century. Mr. Lockmiller.

Hist. Ex. 321. The Latin American Republics. 3 credits

Social, economic, and political development of Latin America since 1810. Mr. .....

Hist. Ex. 322. Contemporary History of the United States. 3 credits

Significant developments in the United States since 1914, with particular emphasis on post war problems and foreign affairs. Mr. Lockmiller.

HORTICULTURE

Courses for Undergraduates

Hort. 101. General Horticulture. 0-0-3

Required of sophomores in Agriculture.

A course designed to give a general insight into the field of horticulture, including geographic centers of production and elements of culture of fruits, vegetables, and floricultural crops. Mr. Gardner, Mr. Randall.

Hort. 102. Plant Propagation and Nursery Practice. 3-0-0

Elective for juniors.

Study of methods and practice in seedage, cuttage, separation and division, budding and grafting. Cultural principles and practices in growing nursery stock. Mr. Randall.

Hort. 105. Small Fruits and Grapes. 3-0-0

Prerequisite: Hort. 101.

A course in the culture and production of small fruits including strawberries, dewberries, blackberries, blueberries, raspberries, currants, and grapes. Mr. Gardner.

Courses for Advanced Undergraduates

Hort. 201. Fruit and Vegetable Judging. 2-0-0

Prerequisite: Hort. 101.

Practice in variety identification, in judging plates, collections, boxes, and commercial exhibits of fruits and vegetables.

Mr. Gardner, Mr. Randall.

Hort. 205. Pomology. 4-0-0

Prerequisite: Hort. 101.

A study of factors underlying fruit production; temperature and moisture relations, culture, fertilization, pruning, fruit setting, yield and storage. Mr. Gardner.

Hort. 206. Systematic Pomology. 2-0-0

Prerequisite: Hort. 101, 205.

Fruit varieties: Their description, identification, nomenclature, and classification; their relationships and adaptations. Judging methods and standards. Mr. Gardner.

Hort. 209. Vegetable Production. 0-0-4

Prerequisite: Hort. 101.

Location, soil preparation, fertilization, irrigation, and general culture applicable to commercial vegetable production. Mr. Randall.

Hort. 210. Commercial Floriculture. 3-0-0

Prerequisite: Hort. 101, 102.

A study of the commercial production of the principal floral crops including actual planting and care of the crops. Mr. Randall.

Hort. 211. Vegetable Forcing. 0-3-0

Prerequisite: Hort. 101, 209.

Production and management of vegetable crops under glass. Practice in growing vegetables in forcing houses. Mr. Randall.

Hort. 212. Systematic Olericulture. 2-0-0

Prerequisite: Hort. 209.

Vegetable varieties; their description, identification, nomenclature, and classification; their relationships and adaptations. Mr. Randall.

Hort. 228. Home Floriculture. 0-0-3

Principles and methods of growing garden flowers and house plants, including varieties and their adaptability. Mr. Randall.

Courses for Graduates and Advanced Undergraduates

Hort. 301. Experimental Horticulture. 0-3-0

Prerequisite: Hort. 205, 209, 210.

A systematic study of the sources of knowledge and results of experiments in pomology, olericulture, and floriculture.

Mr. Gardner, Mr. Randall.

Hort. 304. Horticulture—Problems. 2-2-2

Elective for seniors. Prerequisite: Twelve credit hours in Horticulture.

Systematic investigation of some phase of Horticulture. Each student chooses his own subjects of study and pursues it independently, under direction of the instructor. Mr. Gardner, Mr. Randall.

Hort. 308. Senior Seminar. 1-1-1

Prerequisite: Twelve credit hours in Horticulture.

Elective for seniors.

A discussion of problems of interest to Horticulturists. Discussion topics assigned to students and members of the Horticultural staff.

Mr. Gardner.

Courses for Graduates Only

Hort. 403. Methods of Horticultural Research. 3-3-3

Prerequisite: Eighteen credit hours in Horticulture.

A study of methods and procedure, outlining problems, assembling and analyzing data, and presenting results; critical review of experiment station work. Staff.

Hort. 404. Seminar. 1-1-1

Required of graduate students only. Prerequisite: Eighteen credit hours in Horticulture.

Assignment of scientific articles of interest to horticulturists for review and discussion; student papers and research problems for discussion.

Mr. Gardner.

Hort. 405. Research. 3-5, 3-5, 3-5

Prerequisite: Eighteen credit hours in Horticulture.

Graduate students will be required to select problems for original research in pomology, olericulture, or floriculture. The work and presentation of results should be of such merit as to be worthy of publication.

Staff.

INDUSTRIAL ENGINEERING

Courses for Undergraduates

I. E. 101. Industrial Engineering I. 2-2-2

Required of sophomores in I. E.

Engineering methods in studies of industrial enterprises. The development, status and trends of American industries. Mr. Shaw.

Courses for Advanced Undergraduates

I. E. 213. Engineering Economics. 3-0-0 or 0-0-3

Required of juniors in Constr. E., and of seniors in E. E. and I. E. Prerequisite: Econ. 102 or 103.

Principles of investments, costs and utility with applications to engineering practice. Choice of investments and replacements. Mr. Shaw.

I. E. 220. Industrial Engineering II. 3-3-3

Required of juniors in I. E. Prerequisite: Econ. 103, I. E. 101.

Industrial organization and industrial relations. Production, control, power, machinery, processes, and labor. Mr. Shaw.

I. E. 222. The Electrical Industry. 0-3-0

Required of seniors in E. E. and I. E. Prerequisite: I. E. 213.

The operation, practices, management, and performance of electric light and power companies and other electrical industries. Factors, indexes, and comparisons. Services and prices. Cost analyses and predeterminations. Mr. Shaw.

Courses for Graduates and Advanced Undergraduates

I. E. 312. Engineering Economics Advanced. 0-3-3

Elective. Prerequisite: I. E. 213.

Comprehensive study of the application of economics to the practice of engineering. Mr. Shaw.

I. E. 320. Public Utilities. 3-3-3

Elective for seniors in engineering. Prerequisite: Econ. 102 or 103.

Intensive study of the regulation of public utilities. Services, rates, rate bases, and returns. Commission laws and procedure. Leading cases. Current problems. Mr. Shaw.

I. E. 330. Industrial Engineering Problems. 0-3-3

Required of seniors in I. E. Prerequisite: or concurrent: I. E. 220.

Detailed study of problems of moment in this rapidly developing field. Mr. Shaw.

I. E. 331. Investigation and Report. 0-0-3

Required of seniors in I. E. Prerequisite: Senior standing in I. E.

Original investigation of a selected and approved problem. Mr. Shaw.

Courses for Graduates Only

I. E. 410. Industrial Engineering Research. 3-3-3

Prerequisite: graduation in Engineering.

Investigation of problems of major importance in the field of Industrial Engineering. Mr. Shaw.

LANDSCAPE ARCHITECTURE

Courses for Undergraduates

L. A. 106. Arboriculture. 1-1-2

Required of freshmen in Landscape Architecture.

Culture of plant materials, their planting, transplanting, training, fertilization, and protection from pests, tree surgery, and lawn making. Messrs. Pillsbury and Weaver.

Courses for Advanced Undergraduates

L. A. 203. Plant Materials. 0-2-0

Elective for juniors.

Ornamental plants, their characteristics of use in planting design for home, school, and church grounds, and farmstead landscapes. Mr. Randall.

L. A. 204. Landscape Gardening. 0-0-3

Elective for seniors. Prerequisite: L. A. 203.

Landscape and planting design applied to the improvement of home, school, church, and community grounds, and the farmstead. Practice in making measured surveys, mapping, and designing improvements and planting. Mr. Pillsbury.

L. A. 216. Plant Materials: Woody Plants. 2-2-2

Required of sophomores in Landscape Architecture. Prerequisite: Bot. 204.

Trees, shrubs and vines, their distribution, form and habits of growth, size, texture, color, and other characteristics determining use in planting design. Mr. Randall.

L. A. 217. Plant Materials: Annual and Herbaceous Plants. 0-0-2

Required of juniors in Landscape Architecture. Prerequisite: Bot. 204.

Herbaceous and annual plants, their height, habits of growth, texture, season, color, and other characteristics determining use in planting design. Mr. Randall.

L. A. 218. Theory of Landscape Design. 0-3-3

Required of sophomores in Landscape Architecture.

Introduction to the study of landscape design; its theoretical basis; the meaning of taste; historic styles; elements, and landscape composition; planting design; and analyses of typical problems in landscape design. Mr. Pillsbury.

L. A. 219. History of Landscape Design. 3-3-0

Required of juniors in Landscape Architecture.

History of the art of landscape architecture from the ages of antiquity to modern times. Sketching from illustrations of design in important periods. Mr. Pillsbury.

L. A. 220. Landscape Design I. 4-4-4

Required of juniors in Landscape Architecture. Prerequisite: L. A. 218.

Problems in presentation, and in consecutive design of small properties, gardens, and other special areas, and suburban estates. Mr. Pillsbury.

L. A. 221. Planting Design. 3-3-3

Required of seniors in Landscape Architecture. Prerequisite: L. A. 216, 217.

Problems in composition with plant materials, presentation, the preparation of planting plans, and cost data. Mr. Pillsbury.

L. A. 222. Landscape Design II. 4-4-4

Required of seniors in Landscape Architecture. Prerequisite: L. A. 220.

Problems in presentation, and in the design of small parks, and other public grounds, and institutional groups. Mr. Pillsbury.

L. A. 223. City Problems. 0-3-0

Required of seniors in Landscape Architecture.

Origins and types of urban communities; modern city and town planning; legal, economic, social, and aesthetic phases and their interrelationships; fundamental data required; methods of planning and financing; zoning, city and regional planning legislation.

Mr. Pillsbury.

L. A. 224. Suburban Design. 0-4-0

Prerequisite: L. A. 220, 223.

The subdivision of land as related to suburban development and urban growth. Mr. Pillsbury.

L. A. 225. Landscape Construction. 2-2-2

Required of seniors in Landscape Architecture. Prerequisite: C. E. 207, 208.

Problems in design of ground surface, walks, and drives; preparation of plans for grading and drainage; estimates of materials and costs; and methods of execution of landscape designs. Mr. Pillsbury.

L. A. 226. Office Practice. 0-0-1

Prerequisite: L. A. 225.

Arrangement of equipment, supplies, data, illustrative and other material in landscape offices; methods of professional procedure; and professional ethics.

LIBRARY METHODS

L. M. 300. Use of the Library. 0-3-0 or 0-0-3

Elective for students in all schools. Prerequisite: junior standing.

Instruction by lectures, assigned readings, and problems in the use of the card catalog, reference books and library methods in general. The course is planned to make the student self-directing in locating information and to demonstrate the value of the library and books for the student in college and after graduation. Mr. Kellam.

MATHEMATICS

Courses for Undergraduates

***Math. 100 a-b-c. Mathematical Analysis.** 3-3-3

Math. 100-a. Fall term (Algebra).

Review of elementary topics, such as Factoring, Fractions, Simple Equations, Exponents, and Radicals. Topics then taken up are Quadratic Equations, Solution of Higher Degree Equations, Simultaneous Quadratic Equations, Logarithms, the Binomial Theorem, Arithmetic and Geometric Progressions, Permutations, Combinations, and the Elementary Theory of Probability.

Math. 100-b. Winter term (Trigonometry).

The study of the Trigonometric Functions with their applications to the solution of the right and oblique triangles, with numerous problems. Also a brief study of Trigonometric Equations and Identities and Inverse Functions. Practical Mensurations of Solids is taken up.

Math. 100-c. Spring term (Mathematics of Finance).

The principal topics are Simple and Compound Interest, Annuities, Sinking Funds and Amortization, and the Valuation of Bonds, and other applications. Staff.

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* This course will be repeated the following terms.

***Math. 101. Algebra.** 6-0-0

Required of freshmen in the Schools of Engineering and Textile, and in the departments of Industrial Management, Industrial Arts, and Landscape Architecture.

This course includes quadratic equations, the progressions, the binomial theorem, permutations and combinations, logarithms, the general theory of equations, and the solution of higher equations. Staff.

***Math. 102. Trigonometry.** 0-6-0

Required of freshmen in the Schools of Engineering and Textile, and in the departments of Industrial Management, Industrial Arts, and Landscape Architecture.

The trigonometric functions, derivation of formulae, the solution of plane and spherical triangles, with practical applications. Staff.

***Math. 103. Analytical Geometry.** 0-0-6

Required of freshmen in the School of Engineering and in the departments of Industrial Management, Industrial Arts, and Landscape Architecture. Prerequisite: Math. 101, 102.

Loci of equations, the straight line, circle, parabola, ellipse, hyperbola, the general equation of the second degree, polar coördinates, transcendental curves, parametric equations, coördinates in space, planes and surfaces. Staff.

Courses for Advanced Undergraduates

***Math. 201. Differential Calculus.** 4-0-0

Required of sophomores in Engineering. Prerequisite: Math. 103.

An elementary course in the fundamental principles of the Calculus, including the formulae for differentiation, with applications to Geometry and to problems in rates, maxima and minima, curve tracing, and curvature. Staff.

***Math. 202. Integral Calculus I.** 0-4-0

Required of all sophomores in Engineering. Prerequisite: Math. 201.

Methods of integration, and the study of the definite integral, with applications to problems in areas, volumes, surfaces, and lengths of arcs. Staff.

***Math. 203. Integral Calculus II.** 0-0-4

Required of sophomores in Engineering. Prerequisite: Math. 202.

A continuation of Integral Calculus I: the calculation of centroids, radii of gyration and moments of intertia; problems in work and liquid pressure; double and triple integrals, infinite series, hyperbolic functions, and the elements of ordinary differential equations. Staff.

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* This course will be repeated the following terms.

Courses for Graduates and Advanced Undergraduates

Math. 301. Differential Equations. 3-0-0

Elective. Prerequisite: Math. 203.

A short course to include the solutions of equations which occur in scientific work and engineering practice. Mr. Fisher.

Math. 302. Advanced Analytical Geometry. 0-3-0

Elective. Prerequisite: Math. 203.

The elements of higher plane curves, and the geometry of space. Mr. Bullock.

Math. 303. Approximate Methods in Applied Mathematics. 0-0-3

Elective. Prerequisite: Math. 203.

Theory of Least Squares and approximate methods in differentiation, integration and the solution of differential equations. Numerous examples in the fields of Physics, Electricity, Mechanics, and Engineering will be solved. Mr. Cell.

Math. 304. Theory of Equations. 3-0-0

Prerequisite: Math. 203.

The usual topics in the theory of equations, the solution of higher equations, exponential and logarithmic equations, and determinants. Mr. Mumford.

Math. 305. Vector Analysis. 0-3-0

Elective. Prerequisite: Math. 203.

A study of the different vector products, and the calculus of vectors, with applications to geometry and mechanics. Mr. Clarkson.

Math. 306. Series. 0-0-3

Elective. Prerequisite: Math. 203.

Fourier series and related series and functions with applications to Physics and Engineerings. Mr. Levine.

MECHANICAL ENGINEERING

Courses for Undergraduates

M. E. 101. Engineering Drawing I. 2-2-2

Required of freshmen in Textiles.

Drawing-board work covering lettering, projections, sections, pictorial drawings, working drawings as related to textile machinery, tracing, and blue-printing. Messrs. Briggs, Fornes, Johnson, Turner, and Young.

M. E. 102. Engineering Drawing II. 3-3-0

Required of freshmen in Engineering, Agricultural Engineers, Teachers of Industrial Arts, and Landscape Architecture.

Drawing-board work covering lettering, projections, sections, revolution, pictorial drawings, intersection, development, working drawings, tracing, and blue-printing.

Messrs. Briggs, Feltner, Fornes, Johnson, Turner, and Young.

M. E. 103. Descriptive Geometry. 0-0-3

Required of freshmen in Engineering, Agricultural Engineers, Teachers of Industrial Arts, and Landscape Architecture.

Prerequisite: M. E. 102.

Representation of geometrical magnitudes by means of points, lines, planes, and solids, and the solutions of problems.

Messrs. Briggs, Feltner, Fornes, Johnson, Turner, and Young.

M. E. 104. Shopwork. 1-1-1

Required of sophomores in Chemical Engineering and freshmen in Textiles.

Use of bench tools, reading blue-prints, making cabinet joints, operation and care of woodworking machinery. Correct methods of staining, varnishing, filling, and gluing various kinds of wood. The forging of iron and steel. Instruction and practice in molding and core making. Cupola practice. Messrs. Ferguson, Lewis, Rowland, and Wheeler.

M. E. 105. Shopwork. 2 or 2 or 2

Required of sophomores in Mechanical Engineering and in Industrial Engineering.

Deal with elementary joinery, finishing, theory of dry-kilning, wood turning. Lectures, demonstrations, and practice in hand work and machine methods. Typical patterns and core boxes are constructed such as solid, split, and loose-piece patterns, mounting of patterns on boards and their preparation for use in the Foundry. Mr. Lewis.

M. E. 106. Woodworking. 3-0-0

Required of sophomores in Architectural Engineering.

Includes elementary joinery, cabinet joints, reading blue prints, and wood turning. Theory of dry-kilning and wood finishing. Lectures, demonstrations, and practice in hand and machine methods. Mr. Lewis.

M. E. 107. Shopwork. 2 or 2 or 2

Required of sophomores in Industrial and Mechanical Engineering.

Lectures, demonstrations, and practice in molding and core making, furnace operations, melting and casting of ferrous and non-ferrous metals and their alloys. Instruction and practice in the production and maileable castings, and heat treatment of castings. Mr. Ferguson.

M. E. 108. Shopwork. 2 or 2 or 2

Required of sophomores in Industrial and Mechanical Engineering.

A study of the principles and practice as applied to the forging of wrought iron and steel. Lectures, demonstrations, and practice in forge welding. Tool making and heat treatment. Mr. Rowland.

M. E. 108-a. Metal Work. 3-0-0

Required of sophomores in Civil, Highway, Sanitary, and Electrical Engineering.

A study of the principles and practices as applied to the forging of wrought iron and steel. Lectures, demonstrations, and practice in forge welding. Tool making and heat treatment.

Mr. Ferguson, Mr. Rowland.

M. E. 109. Metallurgy. 2-2-2

Required of sophomores in Mechanical Engineering.

Prerequisite: Chem. 101.

The study of metals and alloys, particularly ferrous alloys, mining, smelting, refining, shaping, and heat-treating. Mr. Selkinghaus.

M. E. 110. Mechanical Drawing. 2-2-2

Six (6) credits required of sophomores in Mechanical Engineering, and four (4) credits required of juniors in Ceramic Engineering and Geological Engineering.

Prerequisite: M. E. 102, M. E. 103.

Drawing-board work covering machine fastenings, pipe fittings, cam design, technical sketching, and working drawings; tracing and blue-printing. Messrs. Briggs, Fornes, and Mullowney.

M. E. 112. Heat Engineering I. 2-2-2

Required of juniors in Industrial Management. Elective in Textile Manufacturing.

Prerequisite: Phys. 103 and Math. 103.

Nature and measurement of heat, work, and power. Study of fuels and combustion, steam and steam boilers, and boiler-room auxiliaries. Elementary thermodynamics of the steam cycle.

Messrs. Bridges and Selkinghaus.

M. E. 114. Mechanical Engineering Laboratory I. 1-1-0

Required of juniors in Industrial Management and seniors in Chemical Engineering.

Calibration of thermometers and gauges, use of planimeters and indicators; coal and gas analyses; tests of lubricating oils. Steam engine tests. Messrs. Bridges, Selkinghaus, and Turner.

M. E. 115. Heat Engineering II. 3-0-0 or 0-0-3

Required of juniors in Civil and Highway Engineering.

Nature and measurement of heat, work, and power. Study of fuels and combustion, steam and steam boilers, and boiler-room auxiliaries.

Mr. Bridges, Mr. Selkinghaus.

Courses for Advanced Undergraduates

M. E. 201. Heat Engineering III. 3-3-0

Required of juniors in Ceramic and seniors in Chemical Engineering.

Prerequisite: Phys. 104, Math. 203, M. E. 102.

Nature and measurement of heat, work, and power. Study of fuels and combustion, steam and steam boilers, and boiler-room auxiliaries. Elementary thermodynamics of the steam and gas engine cycles.

Mr. Selkinghaus.

M. E. 202. Mechanical Engineering Laboratory II. 1-1-1

Required of juniors in Ceramic, Electrical, Industrial, Mechanical, and Mining Engineering. Concurrent with M. E. 204.

Calibration of thermometers and gauges, use of planimeters and indicators; coal and gas analyses; tests of lubricating oils. Steam engine tests. Messrs. Bridges, Selkinghaus, and Turner.

M. E. 203. Kinematics. 3-3-3

Required of juniors in Mechanical Engineering.

Prerequisite: M. E. 102, 103, and M. E. 110.

A study of the forms and motions of machine parts. Mr. Fornes.

M. E. 204. Heat Engineering IV. 3-3-3

Required of juniors in Electrical, Industrial, Mechanical, and Mining Engineering.

Prerequisite: Phys. 104, Math. 203, and M. E. 110.

Nature and measurements of heat work, and power. Study of fuels, and combustion, steam and steam boilers, and boiler-room auxiliaries. Elementary thermodynamics of the steam and gas engine cycles.

Messrs. Bridges, Selkinghaus, and Vaughan.

M. E. 205. Furniture Designs and Rod-Making. 3-3-3

Required of juniors in M. E. (Furniture Option).

Prerequisite: M. E. 105, 107, and 108.

Principles of elementary freehand design. Methods of dry-kilning, finishing, filling and staining, and rod-making. Mr. Wheeler.

M. E. 206. Machine Design. 3-3-3

Required of seniors in Mechanical Engineering.

Prerequisite: C. E. 200, M. E. 203.

Practical application of the principles of mechanics and strength of materials to the design and construction of machines. Determination of the proper structure, form, size, and relation of the various machine parts. Mr. .....

M. E. 215. Furniture Design and Construction. 2-4-5

Required of seniors in Mechanical Engineering (Furniture Option).

Prerequisite: M. E. 205.

Theory and practice in construction and finishing. Factory processes and layout for quantity production. Mr. Wheeler.

M. E. 218. Machine Shop I. 1-1-0

Required of juniors in Chemical Engineering.

Prerequisite: M. E. 104.

Instruction is given in chipping, filing, scraping, and babbitting. General machine work, including straight and taper turning, drilling, shaper work, and gear cutting. Mr. Wheeler.

M. E. 219. Machine Shop II. 1-1-1

Required of juniors in Mechanical Engineering and Textile Manufacturing.

Prerequisite: M. E. 104 or M. E. 108.

Given by lectures and demonstrations. Includes laying out work, grinding tools, chipping, drilling, tapping, babbitting bearings and scraping. Machine work, including centering, straight and taper turning, chucking, screw cutting, shaper work, planer work and index milling, and gear cutting. Mr. Wheeler.

M. E. 251. Metal Shop. 3-3-0

Required in Industrial Arts. Prerequisite: Ed. 106.

Use of hand and machine tools in problems for Secondary Schools. Mr. Rowland.

Courses for Graduates and Advanced Undergraduates

M. E. 301. Mechanical Engineering Laboratory III. 1-1-1

Required of seniors in Mechanical Engineering.

Prerequisite: M. E. 202, 204.

Testing of materials, efficiency, and economy runs on gasoline, oil, and steam engines, steam turbine and fans. Boiler and steam pump tests. Messrs. Bridges, Selkinghaus, and Turner.

M. E. 303. Heating and Air-Conditioning. 0-3-0

Required of seniors in Mechanical Engineering and Industrial Management.

Prerequisite: M. E. 202, 204.

Principles of heating and ventilation. Hot air, steam, and hot water heating systems; air conditioning. Mr. Vaughan.

M. E. 304. Refrigeration. 0-0-3

Required of seniors in Mechanical Engineering.

Prerequisite: M. E. 202, 204.

Theory of refrigeration; types of ice-making and refrigerating machinery. Installation, management, and cost of operation.

Mr. Vaughan.

M. E. 305. Power Plants. 3-3-3

Required of seniors in Mechanical Engineering.

Prerequisite: M. E. 202, 204.

A critical study of fuels and combustion, heat balance, steam boilers, prime movers, and auxiliaries. Mr. Vaughan.

M. E. 306. Hydraulic Machinery. 0-0-3

Required of seniors in Electrical Engineering.

Prerequisite: C. E. 205.

Design and tests of hydraulic motors and pumps, including study of their theoretical and actual efficiencies. Naval Hydro-Mechanics, Laboratory Experiment. Mr. Riddick.

M. E. 310. Aircraft Engines. 3-3-3

Required of seniors taking Aeronautical Option in Mechanical Engineering.

Prerequisite: M. E. 204.

Thermal and mechanical characteristics of high-speed internal combustion engines; operation, performance, and design. Mr. .....

M. E. 311. Aeronautical Laboratory. 1-1-1

Required of seniors taking Aeronautical Option in Mechanical Engineering.

Prerequisite: M. E. 202.

Experiments with aircraft engines and auxiliaries. Wind-tunnel tests on airfoils and models. Rigging of airplanes.

Mr. ....., Mr. Mullowney.

M. E. 312. Airplane Design. 3-3-3

Required of seniors taking Aeronautical Option in Mechanical Engineering.

Prerequisite: C. E. 200 and M. E. 203.

A study of the design of the wings and fuselage of an airplane.

Mr. Mullowney.

M. E. 313. Aerodynamics. 3-3-3

Required of seniors taking Aeronautical Option in Mechanical Engineering.

Prerequisite: Phys. 104, Math. 203, and C. E. 201.

A study of forces affecting the airplane in flight. Mr. Mullowney.

M. E. 320. Metallography. 3-3-3

Prerequisite: Metallurgy and Engineering Physics.

Internal structure of metals and alloys; its relation to physical properties. Influence of thermal and mechanical treatment. Microscopical analysis. Mr. .....

Courses for Graduates Only

***M. E. 401. Power Plant Design.** 3-3-3

Prerequisite: M. E. 301, 305.

The design of a plant to fulfill conditions obtained by investigation and research; specifications for design and installation. Mr. Vaughan.

***M. E. 402. Design of Heating and Ventilating System.** 3-3-3

Prerequisite: M. E. 301, 305.

A study and design of a heating system for specific conditions; specifications for installation and performance tests of heating equipment. Mr. Vaughan.

M. E. 403. Advanced Aerodynamics. 3-3-3

Prerequisite: M. E. 313.

Wind tunnel research. First term: a study of tests performed. Second term: a series of experiments. Third term: the compilation and interpretation of the results. Mr. Mullowney.

M. E. 404. Aerodynamic Research. 3-3-3

Prerequisite: M. E. 312.

Research and thesis in connection with M. E. 403. Mr. Mullowney.

M. E. 405. Mechanical Engineering Research. 3-3-3

Prerequisite: M. E. 301, 305.

Research and thesis in connection with M. E. 401 and M. E. 402. Mr. Vaughan.

MILITARY SCIENCE AND TACTICS

Mil. 101. Military Science I. 2-2-2

This, the first-year basic course, is required of all physically fit freshmen.

The National Defense Act and the R. O. T. C., Military Courtesy and Discipline, Military Hygiene and First Aid, Leadership, Rifle Marksmanship, Map Reading, Military Organization, Current International Situation, Military History and Policy, and Obligations of Citizenship.

Mil. 102. Military Science II. 2-2-2

This, the second-year basic course, is required of all physically fit sophomores who have completed Military Science 101.

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* Only one of these courses to be offered during any college year.

Leadership, Musketry, Automatic Rifle, Scouting and Patrolling, Combat Principles of the Rifle Squad and Section; Interior Guard Duty and Military History.

Mil. 103. Military Science III. 3-3-3

This, the first-year advanced course, is elective for selected juniors. Prerequisite: Mil. 102.

Aerial Photograph Reading, Leadership, Machine Gun, 37 MM. Gun, Three-inch Trench Mortar, Combat Principles of the Rifle Section and Rifle Platoon, Pistol, Supply and Mess Management, Care of Animals and Stable Management, Property and Funds, and Field Fortifications.

Mil. 104. Military Science IV. 3-3-3

This, the second-year advanced course, is required of all seniors who have completed the first-year advanced course. Prerequisite: Mil. 103.

Military Law and Officers Reserve Corps Regulations, Military History and Policy, Administration of the Rifle Company, Field Engineering, Leadership, Combat Principles of the Rifle Company, Machine Gun Company, and Howitzer Platoon, Tanks and Mechanization, Defense Against Chemical Warfare, Combat Intelligence, and Signal Communications.

Full credit will be given for work at other institutions maintaining a *Senior* unit of the Reserve Officers Training Corps as shown by the students' record, Form 131 A. G. O., kept by the Professor of Military Science and Tactics.

MINING ENGINEERING

Courses for Undergraduates

Min. E. 102. Mining I. 0-0-3

Required of juniors in Mining Engineering.

A study of the general principles of metallurgy. The course will include the metallurgy of the common base metals, copper, iron, lead, and zinc. Some time will be devoted to the methods of fire assaying.

Mr. Bramer.

Courses for Advanced Undergraduates

Min. E. 201. Mining II. 3-3-3

Prerequisite: Min. 102. Required of seniors in Mining Engineering.

The first term will be devoted to a study of the principles of ore dressing, machinery and processes involved.

The remainder of the course will include an intensive study of methods of mining. Both open pit and underground methods will be treated.

Mr. Bramer.

Min. E. 301. Mining III. 3-3-3

Prerequisite: Min. E. 201. Elective.

Mine examination, reports, valuation, and management. The course will also involve a study of mining periodicals with the purpose of acquainting the student with the present trend and advancement of mining engineering.

Mr. Bramer.

MODERN LANGUAGES

FRENCH

Courses for Undergraduates

M. L. 101. Elementary French. 3-3-3

Elective. Reading and translations with elements of grammar; pronunciation, diction, and oral practice. Mr. Ballenger.

Courses for Advanced Undergraduates

M. L. 201. French Prose. 3-3-3

Elective. Prerequisite: M. L. 101, or equivalent.*

General survey of French literature and culture, with emphasis on Hugo, Dumas, Daudet, and others. Translations, parallel readings and reports. Mr. Ballenger.

M. L. 202. Commercial and Industrial French. 3-3-3

Elective. Prerequisite: M. L. 201.

Translation and interpretation of commercial and industrial literature; peculiar terminology of French technical writings. Alternates with M. L. 208. Mr. Ballenger.

M. L. 208. French—Phonetics and Diction. 3-3-3

Elective. Prerequisite: M. L. 201.

Practice in French pronunciation, idiomatic construction and ordinary usages of the languages. Alternates with M. L. 202. Mr. Ballenger.

Courses for Graduates and Advanced Undergraduates

M. L. 301. Scientific French. 3-3-3

Elective. Prerequisite: M. L. 201.

Extensive reading in scientific literature; scientific terminology, and acquisition of a scientific vocabulary. Parallel readings, reports, and conferences. Mr. Hinkle.

M. L. 313. French Prose Masterpieces. 3-3-3

Elective. Prerequisite: M. L. 201.

Translation of French for purposes of investigation. Parallel readings, reports, and conferences. Alternates with M. L. 301. Mr. Hinkle.

GERMAN

Courses for Undergraduates

M. L. 102. Elementary German. 3-3-3

Elective.

Reading and translations with elements of grammar; pronunciation, diction, and oral practice. Mr. Hinkle.

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* Two years of High School work will be considered the equivalent of M. L. 101, 102 or 103.

Courses for Advanced Undergraduates

M. L. 205. German Prose. 3-3-0

Elective. Prerequisite: M. L. 102, or equivalent.*

General survey of German literature and culture, with emphasis on translations, parallel readings, and reports. Mr. Hinkle.

M. L. 207. Elementary Scientific German. 0-0-3

Elective. Prerequisite: M. L. 205.

Translations with study of scientific construction, and the acquisition of a scientific vocabulary. Mr. Hinkle.

Courses for Graduates and Advanced Undergraduates

M. L. 304. Advanced Scientific German. 3-3-3

Elective. Prerequisite: M. L. 207.

This is an extensive reading course in advanced scientific literature. It is designed and conducted primarily to meet the needs of students who are majoring in Science. Mr. Hinkle.

M. L. 314. German Prose Masterpieces. 3-3-3

Elective. Prerequisite: M. L. 205.

Translation of German for purposes of investigation. Parallel readings, reports, and conferences. Alternates with M. L. 304. Mr. Hinkle.

SPANISH

Courses for Undergraduates

M. L. 103. Elementary Spanish. 3-3-3

Elective. Reading and translations with elements of grammar; pronunciation, diction, and oral practice. Mr. Ballenger.

Courses for Advanced Undergraduates

M. L. 209. Spanish Prose. 3-3-3

Elective. Prerequisite: M. L. 103, or equivalent.*

General survey of Spanish literature and culture, with emphasis on modern Spanish classics. Translations, parallel readings, and reports. Mr. Ballenger.

M. L. 206. Commercial and Industrial Spanish. 3-3-3

Elective. Prerequisite: M. L. 209.

Study of peculiar terminology of technical Spanish, Orders, Forwarding, Discounts, Credits, Payments, Complaints, Soliciting, Offers, and other similar subjects. Mr. Hinkle.

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* Two years of High School work will be considered the equivalent of M. L. 101, 102 or 103.

Courses for Graduates and Advanced Undergraduates

M. L. 315. Spanish Prose Masterpieces. 3-3-3

Elective. Prerequisite: M. L. 209.

Translation for developing facility in Spanish. Parallel readings, reports, and conferences. Alternates with M. L. 310. Mr. Hinkle.

General Courses

M. L. 310. French, German, and Spanish Civilization. 3-3-3

Elective. Prerequisite: two years French, German, or Spanish.

Development of French, German, and Spanish civilization, culture, manners and customs. Parallel readings, reports, and conferences. Mr. Hinkle.

M. L. 316. The Development of Language. 3-3-3

Prerequisite: M. L. 201, 205, 209, or equivalent.

The various phases of linguistic growth, with the object of providing a basis for intelligent language study. Problems as to the origin of language, linguistic change, grammatical categories, dialects, standard language, word order, inflection, isolation, agglutination, etymology, and other linguistic processes. Mr. Hinkle.

M. L. 317. Masterpieces of Foreign Literature. 3-3-3

Prerequisite: M. L. 316, or equivalent.

A study of outstanding literary productions in each of the various types of literature with lectures on the cultural background out of which they have developed. Especial attention given to the literary contributions of France, Germany, Italy, and Spain. Mr. Hinkle.

PHYSICAL EDUCATION

Courses for Undergraduates

P. E. 101. Fundamental Activities and Hygiene. 1-1-1

Required of all freshmen except those excused upon the recommendation of the college physician.

Individual health and physical efficiency of each student, based on standard athletic, gymnastic, and efficiency tests. Lectures on personal hygiene required in one term only. Mr. Miller and staff.

P. E. 102. Sport Activities. 1-1-1

Required of all sophomores except those excused upon the recommendation of the college physician. Prerequisite: P. E. 101.

Election permitted in popular sports for healthful exercise and a fair degree of skill in them. Mr. Miller and staff.

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* Two years of High School work will be considered the equivalent of M. L. 101, 102 or 103.

P. E. 103. Corrective Activities. 1-1-1

Required of all freshmen excused from P. E. 101.

Special exercises for those students who cannot take work in regular course because of a physical handicap. Mr. Miller and staff.

P. E. 104. Corrective Activities. 1-1-1

Required of all sophomores excused from P. E. 102.

Special exercises given those students who cannot take the regular course because of physical handicap. Mr. Miller and staff.

P. E. 110. Hygiene. 0-0-3

Elective in Education only. Prerequisite: Zool. 103.

Fundamentals of personal health and the habits based thereon. Attention to food and feeding, exercise and rest, brain and nervous system, special senses, reproductive system, bathing and elimination.

Mr. Warren.

P. E. 111. Games and Organized Play. 2-0-0

Elective in Education only. Prerequisite: P. E. 101.

Games suitable for the playground, elementary and secondary schools, ranging from the simplest primary school games to organized games, such as volleyball, playground baseball. Mr. Miller.

P. E. 112. Gymnastics—Theory and Practice. 0-2-0

Elective in Education only. Prerequisite: P. E. 101.

Methods and practice of Swedish and German systems of calisthenics, marching, heavy and light apparatus. Organization and presentation of material. Mr. Miller.

P. E. 113. Track and Field—Theory and Practice. 0-0-3

Elective in Education only. Prerequisite: P. E. 101.

Organization, theory, and practice of coaching track and field athletics. Two classroom periods and three field-periods required per week.

Mr. Sermon.

P. E. 114. Football—Theory and Practice. 3-0-0

Elective in Education only. Prerequisite: P. E. 102.

Organization, theory, and practice football coaching. Two class-room periods and three field-periods required per week. Mr. Anderson.

P. E. 115. Basketball—Theory and Practice. 0-3-0

Elective in Education only. Prerequisite: P. E. 102.

Organization, theory, and practice of basketball coaching. Two class-room periods and three field-periods required per week. Mr. Sermon.

P. E. 116. Baseball—Theory and Practice. 0-0-3

Elective in Education only. Prerequisite: P. E. 102.

Organization, theory, and practice of baseball coaching. Two classroom periods and three field-periods required per week. Mr. Doak.

P. E. 117. Junior Practice Teaching. 1-1-1

Elective in Education only. Prerequisite: P. E. 111, 112, 113.

Students will do supervised teaching in courses P. E. 101 and P. E. 102. Mr. Miller.

P. E. 118. History and Principles of Physical Education. 0-2-0

Elective in Education only. Prerequisite: senior standing.

An historical survey of physical education; the conditions that influence physical activities among people. The relationship of Physical Education to growth and development and to general education. Mr. Miller.

P. E. 119. Medical and Health Supervision. 3-0-0

Elective in Education only. Prerequisite: senior standing.

Methods of examinations for physical defects. Remedial exercises. Prevention and treatment of common athletic injuries. Training and conditioning men for various sports. Mr. Sermon.

P. E. 120. Organization and Administration of Physical Education. 0-0-3

Elective in Education only. Prerequisite: senior standing.

Policies to be followed in schools and colleges, finances, construction, equipment and care of plant; selection of staff; methods of handling enrollment, records, and reports. Administrative problems involved in handling competitive sports. Mr. Miller.

P. E. 121. Senior Practice Coaching. 1-1-1

Elective in Education only. Prerequisite: P. E. 114, 115, 116.

Opportunity will be made in Raleigh for students to coach sports in season, under supervision. This will afford a field to apply the skill and methods secured in the other courses. Mr. Doak.

PHYSICS

Courses for Undergraduates

Phys. 100. Physics Survey. 0-3-0

An introductory survey of physical phenomena, with the scientific method developed and conclusion drawn therefrom; designed for the enrichment of the student's thinking. Mr. Heck.

Phys. 101. General Physics. 4-4-4

A general survey of the phenomena, laws, and devices of modern physical science. Mr. Heck, Mr. Bartlett.

Phys. 103. F, W, S. Physics for Textile Students. 4-4-4

Required of freshmen in the Textile School. Prerequisite: Math. 100.

Industrial Physics, with emphasis on practical applications to textile industry. Mr. Lancaster, Mr. Miles.

Phys. 104. F, W, S. Physics for Engineers. 4-4-4

Required of sophomores in Engineering. Prerequisite: Math. 102.

General Physics, with emphasis on problems and engineering applications. Messrs. Derieux, Dixon, and Meares.

Phys. 105. Physics for Agricultural Students. 5-0-0 or 0-0-5

Required of sophomores in Agriculture.

Elements of machines, physics of heat and weather, and applications of light and electricity on the farm. Mr. Heck, Mr. Bartlett.

Phys. 107. Descriptive Astronomy. 0-3-0 or 0-0-3

Elective.

The sun and planets, the stars and modern research in astronomy; observations with telescope. Mr. Heck.

Courses for Advanced Undergraduates

Phys. 201. Advanced Physics. 4-4-4

Elective. Required of sophomores specializing in Physics. Prerequisite: Phys. 101, Math. 103.

Designed for teaching Physics in secondary schools or for those desiring specialization in Physics. Mr. Heck.

Phys. 202. Industrial Optics. 3-0-0

Elective, especially for Engineering and Industrial Management students. Prerequisite: Phys. 101, or equivalent.

Photometric units, photometry and illumination, light sources, radiometry and spectroradiometry, color, light-sensitive cells, optical glass types and manufacture, design, manufacture, and testing of optical parts, lens errors and corrections, design and manufacture of optical instruments. Mr. Derieux.

Phys. 203. Photography. 0-3-0

Elective. Prerequisite: Phys. 101, or equivalent.

A study of the optical requisites of the camera; proper exposure, development and printing; lantern slides, micro photography, projection prints and color photography. Mr. Meares.

Phys. 204. Electron Tubes and Their Application to Industry. 0-0-3

Elective. Prerequisite: Phys. 101 or 104.

Thermionic emission, various thermionic emitters, secondary emission, space charge, discharge in gases, photoelectricity, photoconductivity, and the photovoltaic effect. Laboratory substituted for lectures as needed. Mr. Dixon.

Phys. 205. Light in Industry. 0-0-3

Elective especially for Textile and Industrial Management students. Prerequisite: Phys. 101, or equivalent.

Fundamentals of light, illumination, and color, with principles applied to selection, mixing, harmony, matching, lighting, photography, and pigments. Mr. Lancaster.

Phys. 209. Meterology. 0-3-0

Required of juniors in Forestry.

Causes of weather change, methods of forecasting, and peculiarities of the weather of North Carolina. Mr. Heck.

Courses for Graduates and Advanced Undergraduates

Phys. 301. Mechanics. 0-3-3 or 0-4-4

Elective. Prerequisite: Phys. 201, Math. 203.

The physics principles of mechanics. Mr. Derieux.

Phys. 302. Electricity and Magnetism. 3-3-0 or 4-4-0

Elective. Prerequisite: Phys. 201 or 104.

Fundamental principles of subject in a more specialized, but intermediate manner. Laboratory, if taken, increases the course to 4 credits. Mr. Dixon.

Phys. 303. Heat. 3-0-0

Elective. Prerequisites: Physics 104 and Integral Calculus.

Methods of temperature measurement, specific heats, thermal expansion in solids, in liquids and in gases, conduction, radiation, kinetic theory of gases, change of state, continuity of state, thermodynamics, low temperatures, high temperatures. Mr. Derieux, Mr. Dixon.

Phys. 304. Sound. 0-0-3 or 0-0-4

Elective. Prerequisite: 12 term credits in Physics.

Production, propagation, and reception of sound, with analysis of physical basis of music. Mr. Heck.

Phys. 305. Light. 0-3-3 or 0-4-4

Elective. Prerequisite: Phys. 101 or 104.

Introduction to principles of geometrical and physical optics. Mr. Derieux.

Phys. 307. History of Physics. 0-0-3

Elective. Prerequisite: Phys. 101.

Development of Physics from its beginnings to the present time. Mr. Heck.

Phys. 308. Modern Physics. 3-3-3

Elective. Prerequisite: Phys. 104, and Integral Calculus.

Alternating currents, electromagnetic radiation, moving charge, the electron, kinetic theory of gases, thermionics, photoelectric effect, X-rays, spectra, atomic structure, ionizing potential, radio and television, radioactivity, isotopes, geophysics, astrophysics, relativity, specific heats, high frequency sound, recent ideas. Mr. Derieux.

Phys. 309. Research. 3-3-3

Elective. Prerequisite: Phys. 101 or 103 or 104.

Undergraduate research given according to student's ability.

Mr. Heck.

Phys. 310. Physics Colloquium.

Current research by department and advanced students; meets weekly at night throughout the year. Mr. Heck.

Courses for Graduates Only

***Phys. 401. Theoretical Mechanics.** 3-3-3

Prerequisite: Phys. 201, Math. 203.

Gyroscopic motion, spiral orbits, compound pendulum, bifilar suspensions, coupled systems, damped and forced oscillations, elasticity, surface tension, osmosis, motion of fluids, viscosity, and wave motion.

Mr. Derieux.

***Phys. 402. Geometrical Optics.** 3-0-0

Prerequisite: Phys. 201, Math. 203.

Photometry, intrinsic energy, luminosity, curved mirrors, refraction through a prism, refraction at curved surface, thin lens, lenses in system of thick lenses, the eye and spectacles, dispersion, aberrations, resolving power, achromatic lenses, and optical instruments. Mr. Derieux.

***Phys. 403. Physical Optics.** 0-3-3

Prerequisite: Phys. 201, Math. 203.

Velocity of light, composition of wave, velocity of wave transmission, wave theory of light, spectra, Doppler effect, absorption, anomalous dispersion, interference, interferometers, color photography, diffraction, and gratings, polarization, and saccharimetry. Mr. Derieux.

***Phys. 404. Kinetic Theory of Gases.** 3-0-0

Prerequisite: Phys. 201, Math. 203.

Laws of Maxwell, Dalton, Avagadro, first and second laws of thermodynamics, mean free path, viscosity, diffusion, Van de Waals' equation, critical point, triple point, solution, vapor and osmotic pressure, boiling point, freezing point, heat of solution, dissociation. Mr. Derieux.

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* Only two of the following alternate gamuts may be given each year: either 401 or 402 and 403, or 404, 405, 406; and either 407 or 408 and 409.

***Phys. 407. Advanced Theory of Electricity and Magnetism.** 3-3-3

Prerequisite: Phys. 201, Math. 203.

Theorem of Gauss, energy in media, boundary conditions, condensers, electrometers, dielectric constants, migration of ions, thermodynamics of reversible cells, thermo-electricity, galvanometers, magnetic circuits, growth and decay of currents, oscillatory discharge, and alternating currents. Mr. Dixon.

Phys. 409. Discharge of Electricity in Gases. 0-3-0

Prerequisite: Phys. 201, Math. 203.

Production of ions in gases, motion of ions, velocity in an electric field, diffusion, recombination, determination of atomic charge, ionization by collision, discharge tubes, cathode rays, positive rays, and X-rays.
Mr. Dixon.

Phys. 410. Experimental Optics. 0-2-2

Laboratory work with the photometer, spectrometer, gratings, Fresnel byprism and mirrors, polarimeter, saccharimeter, and interferometer.
Mr. Derieux.

Phys. 411. Research. 3-3-3

Open to all graduates. Every graduate student sufficiently prepared is expected to undertake a research in some particular field of Physics. At least six hours a week must be devoted to such a research.
Messrs. Heck, Derieux, and Dixon.

Phys. 412. Atomic Theory. 3-0-0

Elective. Prerequisite: Phys. 302.

Bohr's model, spectral formula, elliptical orbits, fine structure of spectral lines, Stark effect, Zeeman effect, Roentgen rays, Moseley's law, periodic system, isotopes, radioactivity, atomic nuclei, ionization, spectra and atomic structure, fluorescence, atomic magnetism. Mr. Dixon.

POULTRY SCIENCE

Courses for Undergraduates

Poul. 101. General Poultry. 0-3-0

Required of sophomores in Agriculture.

Fundamental principles of poultry production.
Mr. Williams, Mr. Dearstyne.

Poul. 103. Incubation and Brooding. 0-0-3

Elective. Prerequisite: Phys. 105, Poul. 101.

Principles of incubator and brooding operation, feeding, housing, and rearing of baby chicks. Mr. Williams.

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* Only two of the following alternate gamuts may be given each year; either 401 or 402 and 403, or 404, 405, 406; and either 407 or 408 and 409.

Courses for Advanced Undergraduates

Poul. 201. Selection and Mating of Poultry. 0-0-3

Elective for juniors in Agriculture. Prerequisite: Poul. 101.

Methods of recognition and selection for purposes of mating from both standard and utility standpoints. Study of progeny performance.

Mr. Dearstyne.

Poul. 202. Poultry Production. 0-4-0

Alternative for sophomores, elective for others. Prerequisite: Poul. 101.

Production of soft roasters, capons, turkeys, and market eggs, sanitation and housing. Mr. Dearstyne, Mr. Williams.

Poul. 208. Preparation and Grading of Poultry Products. 0-3-0

Elective especially for seniors in Agriculture. Prerequisite: Poul. 101 and 202.

Commercial fattening, grading and marketing eggs. Refrigerating and storage, markets. Mr. Williams.

Courses for Graduates and Advanced Undergraduates

Poul. 301. Laboratory Diagnosis in Poultry Diseases and Poultry Serology. 0-3-3

Prerequisite: Poul. 101, 304, 305; Bot. 203; Zool. 102.

Diagnosis of poultry diseases by autopsy, artificial infection and study of disease cycles, prophylaxis; vaccine production and serological tests for poultry diseases. Mr. Greaves.

Poul. 302. Poultry Judging. 3-0-0

Required of juniors in Poultry Production, elective for others. Prerequisite: Poul. 101, 103, 201.

Class and practice work in standard and utility judging of fowl. Selection and preparation of birds for showing. Mr. Williams.

Poul. 303. Poultry Nutrition. 0-3-0

Required of juniors in Poultry Production, elective for juniors in Agriculture. Prerequisite: Chem. 101, Zool. 101 and 102, Poul. 101 and 202.

Feeds and feeding; physiology of digestion, absorption and elimination; mineral and vitamin requirements. Mr. Dearstyne.

Poul. 304. Poultry Anatomy. 3-3-0

Required of juniors in Poultry Production, and elective especially for juniors in Agriculture. Prerequisite: Poul. 101, Zool. 102.

Study of normal structure of the fowl including osteology, arthrology, myology, splanchnology, angeology, neurology, and aesthesiology.

Mr. Gauger.

Poul. 305. Poultry Diseases. 3-3-0

Required of juniors in Poultry Science, elective for others. Prerequisite: Poul. 101, Zool. 102.

Sanitation, parasite infestations and control, contagious and noncontagious diseases of the fowl. Mr. Gauger.

Poul. 306. Commercial Poultry Plant Management. 0-0-3

Required of seniors in Poultry Science, elective for others. Prerequisite: Poul. 101, 201, 208.

Study of development and maintenance of a commercial poultry plant, custom hatching, and commercial incubation, cost of production. Mr. Williams.

Poul. 307. Poultry Problems. 1-1-1

Required of seniors in Poultry Science, elective for others. Prerequisite: Poul. 101, 201, 208.

Study of new developments in poultry research, discussion of practical problems. Mr. Dearstyne.

Poul. 309. Poultry Survey Studies. 3-3-3

Elective. Prerequisite: Poul. 101, 201, 208.

Field problems as to housing, feeding, production, marketing, and disease. Mr. Dearstyne.

Courses for Graduates Only

Poul. 403. Poultry Physiology. 3-0-0

Prerequisite: Poul. 101, 301, 304, 305; Zool. 102.

Circulation, digestion, assimilation of the fowl; causes of mortality. Mr. Dearstyne.

Poul. 404. Poultry Histology and Pathology. 3 or 3 or 3
and
Poul. 405.

Prerequisite: Poul. 101, 304, 305; Zool. 102, 201, 207, 310.

Sectioning, staining, and identifying normal tissue of the fowl, gross and microscopic pathology including section, staining of tissue, and identifying tissue derangement, causes of mortality. Mr. Gauger.

Poul. 406. Production Studies and Experiments. 3 or 3 or 3

Prerequisite: Poul. 101, 102, 303, 305.

Problems in Poultry nutrition, breeding, and commercial poultry production and marketing. Mr. Dearstyne.

Poul. 407. Poultry Research. 3 or 3 or 3

Prerequisite: Eighteen term credits in Poultry.

Problems in poultry nutrition, diseases, marketing, and breeding may be undertaken. Such problems shall be conducted on a definitely outlined basis acceptable to the department. Poultry Staff.

Poul. 408. Seminar. 3 or 3 or 3

Prerequisite: Eighteen credit hours in Poultry. Mr. Dearstyne.

PSYCHOLOGY

Psychol. 101. Introduction to Psychology. 3 or 3 or 3

A study of the structure, function, and laws of human behavior with applications of Psychology to everyday life. Mr. .....

Psychol. 101-A. Introduction to Psychology Laboratory. 1 or 1 or 1

Mr. .....

Psychol. 203. Educational Psychology. 3-3-3

(For description of the course see Ed. 203.) Mr. Garrison.

Psychol. 238. Industrial Psychology. 0-0-3

Required of seniors in Industrial Management and Industrial Engineering; elective for others.

Applications of psychological principles and techniques to industry and business. Mr. Garrison.

Psychol. 269. Applied Psychology. 0-3-0

Application of psychological principles in special field of business and industry, with special reference to advertising and selling.

Mr. .....

Psychol. 305. Social Psychology. 0-3-0

Elective. Prerequisite: Ed. 101 and 3 additional term credits in Sociology or Psychology.

Social applications of Psychology; social stimulation, response, and attitudes. Mr. Garrison.

Psychol. 368. Measurements in Psychology. 3-0-0

Prerequisite: 6 credits in Psychology supplemented by credits in related fields.

An introduction to the theory and practice of mental and aptitude testing. A study will be made of the various types of mental and performance tests now in use. A critical analysis is made of the methods of devising such tests and the application of the results to the various vocational activities. Mr. Garrison.

Psychol. s371. Psychology of Exceptional Children. 3 credits

Psychol. s373. Psychology of Adolescence. 3 credits

Psychol. Ex. 375. Psychology of Language. 3 credits

Psychol. 377. Psychology of Secondary Education. 0-0-3

(For description of the course see Ed. 377.) Mr. Garrison.

Psychol. 390. Problems in Social Psychology. 0-0-3

Prerequisite: Psychol. 305.

Designed for students interested in a study of specific social psychology problems in rural and industrial situations. Collateral reading and individual reports will characterize the course.

Messrs. Garrison and .....

Psychol. 403. Problems in Educational Psychology. 3-3-3

(For description of the course see Ed. 403.) Mr. Garrison.

RELIGION

Courses for Undergraduates

Rel. 101. Introduction to Religion. 3-0-0

Elective. Typical forms and aspects of religion, religious phenomena, and basic sociological, psychological, and philosophical groundings of religion. Mr. Hicks.

Rel. 102. The Life of Jesus. 3-0-0

Elective. The life of Jesus; Synoptic Gospel records with review of the social, economic, and political background of age that produced Jesus.

Mr. Hicks.

Rel. 103. Social Ethics. 0-0-3

Elective. Historical and psychological study of moral nature and moral progress; origin and development of the social conscience; and changing ethic in certain aspects of social life. Mr. Hicks.

Rel. 104. Social Teachings of Jesus. 0-3-0

Elective. Social principles and ideals of Jesus in the Gospels: The Sermon on the Mount with teachings about God, prayer, wealth, peace, and war. Mr. Hicks.

Courses for Advanced Undergraduates

Rel. 201. Comparative Religion. 0-3-0

Elective. History, general characteristics, and social significance of the great ethnic religions of the world, characteristics of the living religions.

Mr. Hicks.

Courses for Graduates and Advanced Undergraduates

Rel. 301. Problems in Religion. 0-0-3

Elective. Prerequisite: Rel. 101 and 3 additional term credits in Religion.

Pertinent problems of religion related to scientific and social developments: nature of religion, prayer, evil, immortality, etc. Individual investigation. Mr. Hicks.

SOCIOLOGY

Courses for Undergraduates

Soc. 101. Human Relations. 2-2-2

Required of all students in the School of Science and Business, and of all students in the Schools of Agriculture, Engineering, and Textiles who do not take Military Science.

Fundamental human institutions, home, school, church, government, and industry; social structure and social problems of our time.

Mr. Winston and staff.

Soc. 102. Introductory Sociology. 3-0-0 or 0-3-0 or 0-0-3

Required of students in the Schools of Engineering and Textiles. Not open to students in the School of Science and Business.

Basic principles of social life and social organization, major social institutions, and problems arising from industrial organization.

Mr. Hicks and staff.

Soc. 103. General Sociology. 3-3-0

Required of juniors in Industrial Management. Elective for others.

Basic principles of sociology, general social organization, and human behavior. Mr. Winston.

Courses for Graduates and Advanced Undergraduates

Soc. Ex. 300. Criminology. 0-0-3

Prerequisite: Soc. 103.

Causes and conditions leading to crime, methods of handling criminals, and various factors in producing criminal behavior. Mr. Winston.

Soc. 301. Social Pathology. 0-0-3

Prerequisite: Soc. 103.

Outstanding pathological problems reacting from social life, social and individual adjustments. Mr. Winston.

Soc. Ex. 302. Sociology of City Life. 0-3-0

Elective. Prerequisite: Soc. 103.

Problems arising from growth of modern town and city life; city planning in regard to social and industrial progress. Mr. Winston.

Soc. 306. The Family Organization. 3-0-0

Prerequisite: Soc. 103.

Family relationships, and development of personality, effects of present-day social changes, various efforts to stabilize the family. Mr. Winston.

Soc. 307. Race Relations. 3-0-0

Elective. Prerequisite: Soc. 103.

Race problems in America and other countries; social, economic, educational status of racial groups; international relationships.

Mr. Winston.

Soc. Ex. 308. Social Anthropology. 0-0-3

Prerequisite: Soc. 103.

Analysis of present-day culture and its effect on behavior.

Mr. Winston.

Soc. 310. Industrial Sociology. 0-0-3

Required of juniors in Industrial Management. Elective for others with permission of the instructor. Prerequisite: Soc. 103.

Influence of industrial life, occupations as social and industrial factors, problems arising from our industrial era. Mr. Winston.

Soc. 311. Population Problems. 0-3-0

Elective. Prerequisite: Soc. 103.

Analyses of outstanding problems connected with the growth and decline of populations in the United States; factors connected with birth and death rates, marriage rates; discussion of the changing quality of population groups. Mr. Winston.

Soc. Ex. 312. General Anthropology. 0-3-0

Prerequisite: Soc. 103.

Physical differences in racial groups; evolution of society.

Mr. Winston.

Soc. 315. Research in Applied Sociology. 2-2-2

Prerequisite: 9 hours of Sociology, and permission of the instructor.

Research problems in applied fields of sociology, such as problems of the family, population problems, social work problems, rural-urban relationships, student success, American leadership. Mr. Winston.

SOILS—AGRONOMY

Courses for Undergraduates

Soils 115. Soils. 0-0-4

Prerequisite: Geol. 120 and Chem. 101. Required of sophomores in Agriculture and juniors in Forestry.

A study of the properties of soils and their relation to soil management.

Mr. Clevenger, Mr. Lutz.

Soils Ex. 120. Soils and Soil Fertility. 3-3

The characteristics of soils as related to their proper management from the point of view of soil conservation and the maintenance of soil fertility.

Mr. Lutz.

Courses for Advanced Undergraduates

Soils Ex. 215. Soils of North Carolina. 3

The origin, characteristics, distribution, native vegetation, agricultural adaptation, and utilization of North Carolina soil types. Mr. Lutz.

Soils Ex. 220. Soil Geography. 3-3

The soils of the world and their relation to climate and physiography as the foundations on which the various agricultural industries are built.

Mr. Lutz.

Soils 265. Soil Fertility. 3-0-0

Prerequisite: Soils 115. For juniors and seniors in Agriculture.

A course dealing with the chemical and biological properties of soils as related to soil fertility. Mr. Lutz.

Soils 270. Soil Survey. 0-0-3

For juniors and seniors in Agriculture. Prerequisite: Soils 115 or equivalent.

The making of detailed soil maps and the writing of soil survey reports.

Mr. Clevenger.

Soils s280. Field Study in Soils. 3 credits

Junior forestry summer camp. Prerequisite: Soils 115.

The great soil groups of the United States, humus and organic surface layers, elements of soil survey methods, characteristics of soil on which soil series are based, field acidity tests and results of work pertaining to correlation of forest growth to soils. Mr. Clevenger.

Courses for Graduates and Advanced Undergraduates

Soils 310. Fertilizers. 0-3-0

For juniors and seniors in Agriculture. Prerequisite: Soils 115 for Agricultural students. For non-Agricultural students, prerequisite: Chem. 101-3-5.

A study of the sources, manufacture, characteristics, and utilization of fertilizers; calculation of formulas. Mr. Clevenger.

Soils 315. The Soils of North Carolina. 0-3-0

For juniors and seniors in Agriculture and Forestry. Prerequisite: Soils 115.

The origin, characteristics, plant adaptation, and fertilizer needs of North Carolina soil types. Field trips. Mr. Clevenger.

Soils 317. Soil Conservation and Land Use. 0-0-3

For juniors and seniors in Agriculture and Forestry. Prerequisite: Soils 115.

A course dealing with the factors affecting erosion, the methods of erosion control, and land use. Mr. Lutz.

Soils 319. Fertilizer Experimentation. 0-0-3

Prerequisite: Soils 310.

A study of methods of determining the fertilizer needs of different crops on different soil types. Practice in mixing fertilizers and in putting out soil type fertilizer experiments. Mr. Clevenger.

Soils 320. Pedology. 3-0-0

For juniors and seniors in Agriculture and Forestry. Prerequisite: Soils 115 and 265.

The genesis, morphology, and classification of the great soil groups of the world. Mr. Clevenger.

Soils 321. Soil Technology. 3-3-3

Prerequisite: Soils 265.

A laboratory, field, and greenhouse course in the physical, chemical, and biochemical properties of soils. Mr. Lutz.

Soils 322. Advanced Soils. 3-3-3

Prerequisite: Soils 265.

A course in advanced soil problems for seniors and graduate students. Mr. Clevenger, Mr. Lutz.

Soils 350. Senior Seminar. 1-1-1

Elective for seniors in Agriculture. Prerequisite: Senior standing and fifteen credits in Soils.

Reports on special problems and scientific articles of interest to soil scientists. Mr. Clevenger, Mr. Williams, Mr. Lutz.

Courses for Graduates Only

Soils 410. Seminar. 1-1-1

Prerequisite: Eighteen credits in Soils.

Reports and discussions of research problems in soil science. Mr. Williams, Mr. Clevenger, Mr. Lutz.

Soils 430. Soil Research. 3-3-3

Prerequisite: Eighteen hours in Soils.

Research in specialized fields of soil science. Mr. Clevenger, Mr. Lutz.

TEXTILES

Courses for Undergraduates

Tex. 101. Textile Principles Laboratory. 1-1-1

Required of freshmen in all Textile curricula.

Operation of plain and automatic looms and carding and spinning machines. Mr. Hart, Mr. Hilton, Mr. Richie.

Tex. 102. Yarn Manufacture I. 3-0-0 or 0-0-3
and
Tex. 103. Yarn Manufacture Laboratory I. 1-0-1

Required of sophomores in all Textile curricula.

Mixing of cotton, description and setting of openers, pickers, and cards. Production, speed and draft calculations. Operation and fixing of machines. Grinding and setting cards. Mr. Hilton, Mr. Richie.

Tex. 104. Knitting I. 2-0-0 or 0-0-2
and
Tex. 105. Knitting Laboratory I. 1-1-1

Required of sophomores in all Textile curricula.

Selection and preparation of knitting yarns, knitting mechanisms, plain and rib knitting machines, circular ribbers, and circular automatic machines. Operation of machines, practical experiments, hosiery analysis, topping, transferring, and looping. Mr. Lewis.

Tex. 106. Fabric Structure and Analysis. 0-2-2 or 4-0-0

Required of sophomores in all Textile curricula.

Systems of numbering woolen, worsted, silk, linen, rayon, and cotton yarn. Plain, twill, and sateen weaves. Ornamentation of plain weaves; wave designs; pointed twills; diamond effects; plain and fancy basket weaves; warp and filling rib weaves.

Analyzing plain, twill, sateen, and other fabrics made from simple weaves, ascertaining the number of ends and picks per inch in sample. Fabric analysis calculations. Mr. Lewis.

Tex. 107. Power Weaving. 0-2-0
and
Tex. 108. Power Weaving Laboratory. 0-1-1

Required of sophomores in all Textile curricula.

Construction of auxiliary motions on plain looms. Cams and their construction. Drop-box loom construction. Methods of pattern chain building. Construction and value of pattern multipliers. Timing of drop-box motion, and other motions.

Operation and fixing of plain, automatic and drop-box looms. Pattern chain building for drop-box looms. Mr. Nelson, Mr. Hart.

Tex. 109. Fabric Testing. 0-0-1

Required of seniors in Textile Manufacturing, Textile Chemistry and Dyeing, and Weaving and Designing.

Testing fabrics for strength. Effect of heat upon fabrics. Effect of regain upon tensile strength. Elasticity of fabrics. Micrometer and calculated tests for fabric thickness. Mr. Shinn.

Tex. 110. Principles of Textile Manufacturing I. 3-0-0

A study of the processes and machines used in textile manufacture, planned as an overview course for those preparing to be teachers of industrial arts in junior and senior high schools or in vocational schools.

Mr. Nelson, Mr. Hilton.

Tex. 111. Principles of Textile Manufacturing II. 0-0-3

Prerequisite: Principles of Textile Manufacturing I, Tex. 110.

A study of the operation and care of textile machines, planned for those who are preparing to be teachers in vocational schools.

Mr. Nelson, Mr. Hilton.

Tex. 112. Dyeing I. 3-0-0 or 0-0-3

and

Tex. 113. Dyeing Laboratory I. 1-1-1

Required of juniors in Textile Manufacturing.

Physical and chemical properties of textile fibres. Chemicals used in preparing fibres for dyeing. Methods of applying substantive, sulphur, basic, developed, acid, acid chrome, mordant and vat dyes. Effect of changes in temperature and volume of the dye bath. Theory of dyeing mixed fabrics. Theory of mercerizing. Tests for the chemical constituents of the fibres. Dyeing experiments using all the different classes of dyes on the various fibres. Tests showing effect of varying such factors as bath, temperature and time. Tests for fastness to light, washing, cross-dyeing, and so forth. Mercerizing experiment.

Mr. Grimshaw, Mr. Clarke.

Tex. 114. Textile Microscopy. 1-1-0

Required of seniors in Textile Chemistry and Dyeing. Elective for others.

Instruction in the use of the microscope. Examination of fibres. Preparation of permanent slides. Mr. Grimshaw.

Tex. 115. Textile Principles. 3-0-0 or 0-0-3

Required of freshmen in all Textile curricula.

Principles of manufacture involved in the textile industry. Elementary calculations for yarns and fabrics; harness and reed calculations; loom production calculations. Textile Staff.

Courses for Advanced Undergraduates

Tex. 201. Yarn Manufacture II. 0-3-0

and

Tex. 202. Yarn Manufacture Laboratory II. 1-1-1

Required of juniors in Textile Manufacturing. Elective for others. Prerequisite: Yarn Manufacture I, Tex. 102, 103.

Tex. 203. Yarn Manufacture III. 0-3-3
and
Tex. 204. Yarn Manufacture Laboratory III. 2-2-2

Required of juniors in Yarn Manufacturing. Prerequisite: Yarn Manufacture I, Tex. 102, 103.

Construction of draw frames; sliver lapper; ribbon lapper, comber; mechanical and electrical stop motions; description and setting of the different parts; weighting of rolls; types of roll covering; care of machines; fly frame builder and differential motions.

Operation and fixing of draw frames; sliver lappers; ribbon lapper; comber and fly frames. Changing of hank roving and the setting of rolls and speeder motions. Mr. Hilton, Mr. Richie.

Tex. 205. Fabric Design and Analysis I. 3-3-0 or 0-3-3

Required of juniors in Textile Manufacturing and Weaving and Designing.

and

Tex. 206. Fabric Design and Analysis II. 0-0-3

Required of juniors in Weaving and Designing.

Prerequisite: Fabric Structure and Analysis, Tex. 106.

Construction of fancy weaves, such as broken twills, curved twills, entwining twills; granite weaves. Imitation leno; honeycomb weaves; fabrics backed with warp or filling; fabrics ornamented with extra warp or filling; combining weaves together to produce new patterns.

Analyzing samples of fancy fabrics for design, drawing in draft, reed, and chain plan. Calculating particulars to reproduce fabric from data obtained from sample. Mr. Shinn.

Tex. 207. Dobby Weaving. 3-0-0 or 0-0-3
and
Tex. 208. Dobby Weaving Laboratory I. 1-1-1

Required of juniors in Textile Manufacturing and Yarn Manufacturing. Elective for others.

Tex. 209. Dobby Weaving Laboratory II. 2-2-2

Required of juniors in Weaving and Designing. Prerequisite: Power Weaving, Tex. 107, 108.

Methods of drawing in and starting up cotton and rayon warps. Setting of harness shafts. Selection of springs or spring jacks. Construction and methods of fixing single and double index dobbies. Methods of pattern-chain building.

Preparation of warps for weaving cotton and rayon fabrics on dobby looms; starting up warps in looms; fixing single and double index dobbies; pattern-chain building; operation of dobby looms. Mr. Nelson, Mr. Hart.

Tex. 210. Cotton and Rayon Dyeing. 0-3-0
and
Tex. 211. Cotton and Rayon Dyeing Laboratory I. 1-1-1

Required of seniors in Textile Manufacturing. Elective for others. Prerequisite: Dyeing I, Tex. 112, 113.

Lectures on color mixing, money value of dyes. Testing of dyes, water, starch, and materials used in sizing. Lubricating oils, oils and oil compounds. Processes and machinery used in dyeing and finishing. Textile printing. Apparatus used in research laboratory.

Color matching. Testing dyes for strength and money value. Physical and chemical examination and application of starches, sizing materials and finishing compounds. Examination of textile oils, soap, and all the different rayons. Analysis of mixed fabrics. Mr. Grimshaw.

Tex. 212. Dyeing II. 3-3-0
and
Tex. 213. Dyeing Laboratory II. 2-2-2

Required of juniors in Textile Chemistry and Dyeing.

Physical and chemical properties of textile fibres. Lectures on wool, silk, rayon, and cotton; hydrometers and chemicals used in dyeing and finishing. Application of dyestuffs to different fibres. Effect of changing bath, temperature, or time factor. Money value and strength test of dyes. Theory of dyeing mixed fabrics. Mercerizing.

Microscopic examination of textile fibres. Dyeing experiments using different classes of dyes on textile fibres. Tests showing the effects of varying such factors as bath, temperature, and time. Fastness to light, washing, and cross dyeing. Money value and strength of various dyes. Mercerizing. Mr. Grimshaw, Mr. Clarke.

Tex. 214. Textile Printing. 3-0-0
and
Tex. 215. Textile Printing Laboratory. 1-1-1

Prerequisite: Dyeing II, Tex. 212, 213.

The history of printing and the development of machinery used. Calico printing with the mordant, basic, and vat colors, analine black, indigo, and insoluble azo colors. Resist and discharge styles.

Paste mixing. Practical experiments. Mr. Grimshaw.

Tex. 216. Principles of Fabric Finishing. 0-0-3
and
Tex. 217. Principles of Fabric Finishing Laboratory. 1-1-1

Elective for Textile students.

A study of machinery used in finishing of textile fabrics and in textile printing, with lectures and pictures. Lectures on materials used in the textile finishing and printing industry and experiments. Mr. Grimshaw.

Courses for Graduates and Advanced Undergraduates

Tex. 301. Yarn Manufacture IV. 3-0-0 or 0-0-3
and
Tex. 302. Yarn Manufacture Laboratory IV. 1-1-1

Required of seniors in Textile Manufacturing. Elective for others. Prerequisite: Yarn Manufacture, Tex. 201, 202.

Tex. 303. Yarn Manufacture V. 3-3-0
and
Tex. 304. Yarn Manufacture Laboratory V. 2-2-2

Required of seniors in Yarn Manufacturing. Prerequisite: Yarn Manufacture, Tex. 203, 204.

Spinning; spooling; twisting. Description and setting of different parts. Builder motions for warp and filling. Bobbin holders, thread guides, traverse motions. Ply yarns. Calculations for twist, speed, and production.

Practical methods of spinning, spooling, winding and twisting. Setting of spinning rolls, spinning frame builder motions for warp, filling, and combination build. The practical application of all machines in Yarn Manufacture. Mr. Hilton, Mr. Richie.

Tex. 305. Knitting II. 0-3-0
and
Tex. 306. Knitting Laboratory II. 1-1-1

Elective for Textile students.

Advanced circular mechanisms. Hosiery design. Auxiliary knitting machinery. Warp and spring needle knitting. Knitting machinery layout and organization. Production control and costs. Laboratory experiments. Mr. Lewis.

Tex. 307. Textile Calculations I. 3-0-0

Required of seniors in Yarn Manufacturing. Elective for others. Prerequisite: Yarn Manufacture, Tex. 102.

Principles underlying the calculation of draft, twist, speed, and production. Systems of numbering yarns. Doubling and twisting yarns. Lay, tension, differential, and cone drum calculations. Practice in solving practical mill problems. Mr. Hilton.

Tex. 308. Manufacturing Problems. 0-0-3

Required of seniors in Yarn Manufacturing. Elective for others. Prerequisite: Yarn Manufacture, Tex. 203.

Mill organization and administration. Machine layout for long and regular draft spinning; production control and costs; making of novelty yarns; making of daily and weekly reports; breaking of single and ply yarns. Regular and reverse twisted yarns. Mr. Hilton.

Tex. 310. Cotton and Rayon Design Laboratory. 1-1-1

Required of seniors in Weaving and Designing.

Designing fancy and jacquard fabrics. These fabrics include tablecloths, figured double plain; matelasse, velvet, corduroy. Leno weaves with one, two, or more sets of doups. Combinations of plain and fancy weaves with leno. Methods of obtaining leno patterns. Methods of making original designs by combinations of color, weave, and sketches. Designs for table napkins, table covers, dress goods, draperies.

Mr. Nelson, Mr. Shinn.

Tex. 311. Fabric Analysis. 1-1-0

Required of seniors in Textile Manufacturing and Weaving and Designing. Elective for others. Prerequisite: Fabric Design and Analysis, Tex. 205.

Analyzing samples of cotton, wool, worsted, linen, rayon, and silk fabrics for size of yarns, ends and picks per inch, weight of warp and filling, so as to accurately reproduce samples analyzed. Obtaining design, drawing in draft, chain, and reed plan for fancy fabrics, such as stripes, checks, extra warp and extra filling figures, leno fabrics, jacquard fabrics, draperies. Mr. Nelson, Mr. Shinn.

Tex. 312. Cotton and Rayon Weaving. 0-0-3

and

Tex. 313. Cotton and Rayon Weaving Laboratory I. 1-1-1

Required of seniors in Textile Manufacturing and Weaving and Designing. Elective for others. Prerequisite: Dobby Weaving, Tex. 207, 208.

Tex. 314. Cotton and Rayon Weaving Laboratory II. 2-2-2

Required of seniors in Weaving and Designing. Prerequisite: Dobby Weaving, Tex. 209.

Principles of loom construction to weave rayon and fine cotton fabrics. Pick and pick looms. Box and multiplier chain-building. Arrangement of colors in boxes to give easy running loom. Extra appliances for weaving leno, towel, and other pile fabrics. Construction and operation of single, double lift, and rise and fall jacquards. Tie-up of harness for dress goods, table napkins, damask, and other jacquard fabrics, such as leno. Relative speed of looms. Production calculations and fabric costs.

Operation and fixing of dobby, pick and pick, and jacquard looms. Preparation of warps to weave rayon and fine cotton fabrics. Building of box, dobby, and multiplier chains. Mr. Nelson, Mr. Hart.

Tex. 315. Color in Woven Design. 3-3-0

Required of seniors in Weaving and Designing. Elective for others. Prerequisite: Fabric Design and Analysis. Tex. 205.

Pigment and light theories of color. Contrast and harmony of color. Factors which influence quality, style, and color. Methods of applying weaves and color to fabrics for wearing apparel and home decorations.

Mr. Hart.

Tex. 316. Textile Calculations II. 0-0-3

Required of juniors in Textile Manufacturing and Weaving and Designing. Elective for others. Prerequisite: Fabric Structure and Analysis. Tex. 106.

An intensive course in calculations for designing, weaving, and analyzing cotton, rayon, silk, wool, worsted and linen yarns and fabrics. Weight of fabrics, ends, and picks per inch. Costing of fabrics. Reed and harness calculations. Loom speed and production. Mr. Hart.

Tex. 317. Cotton and Rayon Dyeing II. 0-3-3
and
Tex. 318. Cotton and Rayon Dyeing Laboratory II. 2-2-2

Required of seniors in Textile Chemistry and Dyeing. Prerequisite: Dyeing II. Tex. 212, 213.

Theories of color matching. Lectures on color mixing, water and mold, starch, materials used in sizing. Lubricating oils, textile oils and oil compounds. Processes and machinery used in dyeing and finishing. Method of analyzing textile fabrics. Laboratory equipment used in textile research and testing laboratories.

Color matching. Physical and chemical examination and application of textile oils, soaps, and finishing compounds. Microscopical and chemical tests on rayons. Dyeing various types of rayon. Operation of dyeing and finishing equipment in the dye house and research laboratories. Mr. Grimshaw.

Tex. 319. Textile Testing. 1-1-1

Elective for Textile students. Prerequisite: Tex. 109 or equivalent.

Tests for moisture content, regain, twist, and tensile strength. Description and operation of testing equipment. Solution and written reports of assigned textile problems. Mr. Hart, Mr. Hilton.

Tex. 320, 321, 322. Cotton and Rayon Design. 3-3-3

Required of seniors in Textile Manufacturing and in Weaving and Designing. Elective for others. Prerequisite: Fabric Design and Analysis, Tex. 205.

Designing fancy and jacquard fabrics. These fabrics include tablecloths, figured double plain; matelasse, velvet, corduroy. Leno weaves with one, two, or more sets of doups. Combinations of plain and fancy weaves with leno. Methods of obtaining leno patterns. Methods of making original designs by combinations of color, weave, and sketches. Designs for table napkins, table covers, dress goods, draperies.
Mr. Nelson, Mr. Shinn.

Courses for Graduates Only

Tex. 401. Yarn Manufacture. 3-3-3

A study of breaking strength and related properties of cotton yarns made under various atmospheric conditions; comparison of yarns produced from long and short-staple cotton with regular and special carding

processes; efficiency of various roller covering materials at the drawing processes; elimination of roving processes by special methods of preparation; comparison of regular and long-draft spinning. Mr. Hilton.

Tex. 402. Textile Research. 3-3-3

A study of the moisture content of cotton yarns and fabrics. The convolutions in cotton fibres and their relation to spinning, weaving, and dyeing. The effect of mercerization on cotton yarns and fabrics. Testing yarns and fabrics under variable conditions for breaking strength and elasticity. Textile staff.

Tex. 403. Textile Design and Weaving. 3-3-3

Study and practice in more advanced designing and analyses of fabrics, such as lenos made with twine and wire doups, lappits, and other fancy fabrics. Designing for jacquard dress goods, table covers, reversibles, and other fabrics. Making original designs for dobby and jacquard fabrics. Fabric costs. Weaving fancy and jacquard fabrics.

Messrs. Nelson, Hart, and Shinn.

Tex. 405. Domestic and Imported Fabrics. 0-3-0

A technical study of imported and domestic fabrics, such as broadcloths, venetian, organdy, lawn, voile, crepe, shirting, dotted swiss, drapery, and other fabrics used for decorative purposes.

Types and characteristics of fabrics imported and exported by foreign countries. Qualities and styles of textile fabrics. Mr. Nelson.

Tex. 406. Textile Dyeing. 3-3-3

The course consists of matching shades from standard and season color cards upon classes of materials which require skill in their dyeing, such as three-fibre, cotton-wool, and half-silk hosiery, woolens and worsteds with effect stripes, and cotton fabrics with woven figures or stripes of the different varieties of artificial silk. Advanced work on chemical and microscopical examination of materials used in dyeing and finishing.

Mr. Grimshaw.

Tex. 407. Advanced Textile Microscopy. 0-0-3

Microscopic study of textile starches, fibres, fabrics, oils, etc.

Study of mounting media for above. Methods of mounting textile materials. Methods of cross-sectioning textile materials. Photomicrography. Mr. Grimshaw.

Tex. 408. Seminar. 1-1-1

Discussion of scientific articles of interest to textile industry. Review and discussion of student papers and research problems. Textile staff.

ZOOLOGY

Courses for Undergraduates

Zool. 101. General Zoology. 4-0-0

An elementary study of animals, with special reference in the morphology and physiology of the vertebrates.

Messrs. Metcalf, Mitchell, Meacham, Bostian, Thornton, and Horton.

Zool. 102. Economic Zoology. 0-4-0

An elementary study of animals with special reference to the more important economic groups; designed to give the student a general knowledge of the animal kingdom.

Messrs. Metcalf, Mitchell, Meacham, Bostian, Thornton, and Horton.

Zool. 103. Human Physiology. 0-3-0

Prerequisite: Zool. 101. Not available for men having had Zool. 201.

A study of human anatomy and physiology with special reference to nutrition. Mr. Thornton.

Zool. Ex. 107. Physiology and Hygiene. 3 credits

An elementary study of human physiology sufficient to serve as a basis for the principles of correct hygiene. Mr. Bostian.

Zool. Ex. 108. Heredity and Eugenics. 3 credits

Basic principles of heredity and their application to human problems. Mr. Bostian.

Courses for Advanced Undergraduates

Zool. 201. Animal Physiology. 0-0-5

Prerequisite: Zool. 101.

Comparative physiology of vertebrates, with particular reference to mammals and man. Detailed studies of various functions, with metabolism emphasized. Mr. Thornton.

Zool. 204. Economic Entomology. 0-0-4

Prerequisite: Zool. 102.

A general study of the insects, including their economic importance, with emphasis upon control of the more important local species. Mr. Mitchell, Mr. Meacham, Mr. Horton.

Zool. 205. Comparative Anatomy.* 0-4-4

Prerequisite: Zool. 101.

Comparative morphology of vertebrates. Interrelations of organ systems studied for the various groups. Mr. Metcalf, Mr. Bostian.

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* Given 1936-37.

Zool. 207. Vertebrate Embryology. 5-0-0

Prerequisite: Zool. 101.

The comparative embryology of the principal groups of vertebrates with special emphasis on the chick and the pig. Mr. Bostian.

Zool. 208, 209. Beekeeping. 3-0-3

Elective for juniors and seniors. Prerequisite: Zool. 102.

Designed to give the principles of scientific beekeeping and honey marketing. Mr. Meacham.

Zool. 210. Forest Entomology. 0-0-3

Prerequisite: Zool. 204.

A special study of forest insects, including the factors governing abundance, and the application of this knowledge in control.

Mr. Mitchell.

Zool. Ex. 220. Animal Nature Study. 3 credits

Prerequisite: Zool. 101, 204, or 205.

For grade school teachers and high school science instructors.

Messrs. Metcalf, Mitchell, and Bostian

Courses for Graduates and Advanced Undergraduates

Zool. 301. Applied Entomology. 3-3-3

Prerequisite: Zool. 204.

A detailed study of the relation of insects to human welfare and the principles of insect control; the special study of the more important insects directly or indirectly affecting man; and a special study of methods of investigation. Mr. Mitchell.

Zool. 304. Genetics. 4-0-0

Prerequisite: Bot. 101 and 102 or Zool. 101.

Basic principles of heredity and variation. Students carry on and analyze breeding experiments, analyze inheritance in various animals and plants. Mr. Bostian.

Zool. 305. Advanced Genetics. 0-4-4

An advanced study of heredity and variation, including biometry. The student will select a problem in breeding to be carried out as a part of the course. Mr. Bostian.

Zool. 307. Systematic Zoology. 3-3-3

Prerequisite: Zool. 101, 102.

The classification of various groups of animals.

Mr. Metcalf, Mr. Mitchell.

Zool. 309. Field Zoology. 0-0-4

Prerequisite: Zool. 101, and 204 or 205, 206.

The study of the relation between animals and their environment. Frequent excursions to the field will be taken.

Mr. Metcalf, Mr. Bostian.

Zool. 315. Histology.* 3-3-0

A study of animal tissues and their preparation. Mr. Thornton.

Courses for Graduates Only

Zool. 401, 402. Systematic Entomology. 3-3-3

Prerequisite: Zool. 307.

Codes of nomenclature, methods of writing descriptions, constructing keys, determining priority, selecting and preserving types, and making bibliographies and indexes. Mr. Metcalf, Mr. Mitchell.

Zool. 403, 404. Research in Zoology. 3-3-3

Prerequisite: Eighteen term credits in Zoology.

Problems in development, life history, morphology, ecology, genetics, taxonomy, or parasitology.

Messrs. Metcalf, Meacham, Mitchell, and Bostian.

Zool. 405. Seminar.

Prerequisite: Eighteen term credits in Zoology. Mr. Metcalf.

* Not given 1936-37.

SUMMARY OF ENROLLMENT, 1935-36

1.	Resident Students.*		
	A. Candidates for Degrees.		
	1. Freshmen	804	
	2. Sophomores	532	
	3. Juniors	327	
	4. Seniors	288	
	5. Graduates	42	
	6. Graduates for Professional Degrees	7	
	Total	2,000	
	B. Irregular Students.		
	†1. Extension Classes in Raleigh and Cary	111	
	2. Special Students for College Credit	3	
	3. Irregular College Students	0	
	Total	114	2,114
2.	Non-resident Students.**		
	A. Correspondence Students for College Credit	1,326	
	B. Extension Students (Classes Outside Raleigh)	2,437	
	C. Correspondence Students in Practical Courses (No College Credit)	16	
	Total	3,779	5,893
3.	Summer School Students, 1935.		
	A. Regular Students (Six Weeks)	334	
	B. Cotton Classing Students (Six Weeks); No College Credit	12	
	Total	346	6,284
	1. Agricultural Teachers (One Week)	211	
	2. Farm Boys and Girls. (Not given in 1935.)		
	3. Farm Men and Women. (Not given in 1935.)		
	4. Farm and Home Agents (One Week)	310	
	5. Young Tar Heel Farmers. (Not given in 1935.)		
	6. Janitors' School	185	
	Total	706	
	Grand Total		6,945

* Does not include spring term, 1935-36.

** Data from January, 1935, to January, 1936.

*ENROLLMENT BY CURRICULA

Agriculture and Forestry

General Agriculture	172
Agricultural Economics	56
Agricultural Specialists	56
Forestry	228
Landscape Architecture	9
Total	521

Education

High School Teachers	75
Industrial Arts	21
Agricultural Education	104
Not Specified	1
Total	201

Engineering

Architectural	21
Ceramic	46
Chemical	187
Civil	56
1. Construction Option	28
2. Highway Option	2
3. Sanitary Option	3
Electrical	156
Geological	1
Industrial	27
Mechanical	127
1. Aeronautical Option	107
Mining	4
Total	765

Science and Business

Business Administration	49
Industrial Management	84
Biology	16
Chemistry	20
Physics	2
General Business	4
Not Specified	1
Total	176

Textiles

Chemistry and Dyeing	36
Manufacturing	273
Yarn Manufacturing	2
Weaving and Designing	15
Textile Management	6
Total	332

Graduate

(Counted in Departmental Classification)

Graduate Students in:	
Agriculture	18
Education	5
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FORTY-SIXTH ANNUAL COMMENCEMENT
Monday Evening, June 10, 1935

DEGREES CONFERRED
SCHOOL OF AGRICULTURE AND FORESTRY

Bachelor of Science

IN AGRICULTURE

Samuel Davidson Alexander
Howard Hilary Boling
Glenn Herrick Cartner
Franklin E. Correll, Jr.
James Robertson Fortune
Jesse Joe Hutchison
Willard H. Kimrey
Abner S. Knowles
Jacob Andrews Lutz
James Alexander Marsh
Rodolph Leonard May
James D. Roberts
J. Brantley Speight

IN AGRICULTURAL ECONOMICS

William Enoch Bateman
Charles Leon Davis
Edward Lawrence Karl Gruehn
Zenda Smith Johnson
Daniel Ray Poole
Holden Ely York

IN FORESTRY

Harold Funk Bishop
W. E. Boykin
Clifford William Comfort
Felix Josef Czbator
Leonard S. Dearborn
John D. Findlay
Thomas Branston Gardiner
John Brice Graves
Frederick Andrew Hodnett
William Wells Hood
Gorham Eddie Jackson
James W. Miller, Jr.
Frederick Neville Newnham
Harvey Walton Oliver
Rufus Harry Page, Jr.
Edward Guernsey Roberts
M. W. Shugart, Jr.
Joseph Ralph Spratt
James Monroe Stingley
Wayne Elliot Stitt
Harry Raymond Wright

IN LANDSCAPE ARCHITECTURE

Jack Hoyle Clark
Arthur Frommer Hoffmann
William Harry Hoffman
Arnold Peterson
William Schwartz

DEPARTMENT OF EDUCATION

Bachelor of Science

IN AGRICULTURAL EDUCATION

Carl Eugene Bernhardt
J. Carlyle Castlebury
Elmer Rupert Dowdy
John Edwin Foil
Connie B. Gay
Joe Thurman Griffin
Cornelius Dupree Griggs
Claude Francis Henkle
Villa Cline Herlocker
John Yelvington Lassiter
Blackwell LaMar Lunsford
Oliver Graham Richardson
Alfred Hugh Tucker

IN HIGH SCHOOL TEACHING

Elizabeth McDowell Allen
Josephine Ball
Charles Wallace Bourne
Mary Estelle Doyle
Margaret Louise Echerd
John B. Fabri
Hilda Mildred Fuller
Irvin O. Garodnick
Mary Elizabeth Hamlet
Lora Ercelle Harton
Aileen Jenrette
John William Johnson, Jr.
Lawrence Hayes McCulley
Irwin Pearson
Sarah Kathryn Pierce
N. Christine Shepherd
Rosalie A. Smith
John T. Stanko
James Kenneth Stephens
William Lewis Sumner, Jr.
Virginia Tate
Willie Marguerite York
LeNeve Zimmerman

SCHOOL OF ENGINEERING

Bachelor of Science

IN ARCHITECTURAL ENGINEERING

Bernard Luke Ahman, Jr.
Wilmer Eugene Barnes
David Wardlaw Morrah
Jesse Martin Page, Jr.
Mangum Webb Sloan
Fred Carter Williams

IN CERAMIC ENGINEERING

James Scuddy Crawford
Harley Banner Foster
Herbert Milton Hamburger
John Utley King
Arthur Sheldon Lloyd
William Rex McLain
Charles Washington Owens, Jr.
John Beverly Sauls
Edwin Blair Smith
Rowlett Barnes Worth

IN CHEMICAL ENGINEERING

Robert Lee Batts, Jr.
Dale Forncrook Behney
Robert Elwood Bowen
Charles Hotchkiss Bronson
Hurt Moorefield Brooks
William Farris Chambers
Charles Clifton Daugherty
Lewis Gordon Garrard
Charles Pattison Gorman
William P. Hammerick
Nathaniel James Heyward
Franklin Carlisle Johnson

Samuel Hawley McKinnon
Bruce Glenn Nanney
Robert Glenn O'Brien
John Davis Pendleton
Frank Orva Perkins
Royal Ector Phillips
James Marion Poyner
Lacy Irvin Rankin
Edwin Grady Sinclair
Carvel Clay Stapleford
Robert Alexander Walker
Robert Edward Lee Wheless, Jr.
Albert Lee Wiley
Leslie Benjamin Williams

IN CIVIL AND HIGHWAY ENGINEERING

Romanus Getty Browning
Malcolm Willoughby Gardner
George William Gillette, Jr.
James Francis Pou
Maurice S. Wilkinson

IN CIVIL ENGINEERING, CONSTRUCTION OPTION

George Crocker
James Eugene Czel
Hyman Dave
Frank Lafayette Hutchison
George Macon Jordan
John Gordon Kellogg
William Worth Merritt
Guilford Carney Oldham
Robert Clement Paterson
William Moring Porter
Elmer Elwood Strickland
James Howell Willett

IN CIVIL ENGINEERING, SANITARY OPTION

Ernest Craig Dameron
Samuel Watson Fowler
Harrell Lee Lyon
Charles Joseph Maneri
Lawrence Alfred Martin

IN ELECTRICAL ENGINEERING

John Bass Brown, Jr.
H. Stanley Clark
Horace Peabody Cotton
Flay G. Dellinger
Charles Taylor Edgerton
Aaron Meyer Epstein
Lenwood Whitfield Hall
James Preston Irwin
Joseph Earle Lennon
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Austin W. Robinson, Jr.
Charles Nicholas Rogers
E. Chester Seewald
Samuel Otha Spruill, Jr.
John Newton Starling
Thomas Tyson Swain

IN INDUSTRIAL ENGINEERING

Edward Davis McDowell
Carol Gordon Woodeson
William Thomas Woodley

IN MECHANICAL ENGINEERING

Benjamin Skinner Dalton
Walter Frank Greenwood
William Fabius Moody
Cecil Howard Moore
Charles Robert Patton
Albert Konrad Pearson
John Clyde Pounds
Dennis Woodrow Ramsey
Ellis Linwood Roper
William Henry Sullivan, Jr.
Joseph Louis Summers

IN MECHANICAL ENGINEERING, AERONAUTICAL OPTION

James Glen Blair
William Henry Burroughs
Carl T. Isaacs
Patrick N. Pastore
William Murdoch Peck
Paul Ogden Stahl

SCHOOL OF SCIENCE AND BUSINESS

Bachelor of Science

IN BUSINESS ADMINISTRATION

James Allen Bailey, Jr.
William Edward Bayless
Eldon Edward Cox
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Hal Fletcher Daniels
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George A. Fisher
Alwin Leigh Folley
Woodrow Craig Furr
Thomas Cleveland Gardner
E. Lavelle Johnston
Colin Hamilton Kerr
Thomas Kerr, Jr.
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Richard Farrell Lawrence
Joseph Judson Long, Jr.
William Hargrave McCullen
Frank Hampton McKinney
William Alfred Myatt, Jr.
Doc Rand Oliver
James Woolard Peel
Wayland Chandler Perry
David Rodwell
Elsie Little Seymour
Brock Cameron Sisell
John William Southerland
Lamar Shuford Summey
Hubert Archibald Todd
Paul Nikita Troshkin
Alfred F. Tyson, Jr.
Gilbert Barnes Wheless
Donald Shaeffer Wilson

IN BIOLOGY

Beaty Lee Bass

IN CHEMISTRY

Marshall Jennings Gardner
William Prentiss Ingram
Oscar Kendle Irgens

IN GENERAL BUSINESS

Jack Norbert Aycocke
Linden Hubert Bolch
Lycurgus Conway Channing
Edward Gray Cobb
Lura M. Penny
Albert Marvin Stroud
Walter Eugene Wootten

IN INDUSTRIAL MANAGEMENT

John Fairley Scales

IN PHYSICS

William Frank Booker

SCHOOL OF TEXTILES

Bachelor of Science

IN TEXTILE CHEMISTRY AND DYEING

Elliott Frederick Anderson
Thomas Sidney Blackwood
William B. Ferguson
Robert Jackson Griffin, Jr.
Edward Tennent Taylor, Jr.
Boris Andruff Uzunoff

IN TEXTILE MANUFACTURING

James Harper Barnhardt
James Turner Bilisoly
Ernest Lafayette Bolick
Donald Augustus Brannon
Kenneth Phillips Brown
Harley Lee Canup
Harris Dietz Carpenter
Claude Lee Carrow, Jr.
George Redin Culbertson
Richard Carlton Etheridge
Julian Carol Ewing
Edwin Burke Fowler
James Jackson Griffith, Jr.
Troy Marvin Herring
Robert Scott Hudson
James McLean Johnson
Odus Lee Moore, Jr.
George Buren Peeler
Robert Lee Poovey
Raymond Dewitt Redding
John Edwin Reeves
Mehmet Salahattin
Joseph Edward Shaw, Jr.
Elmer Lee Spence
Mills Monroe Tuttle
William Hale White
Hugh Dave Whitener
Robert Chris Williams

IN WEAVING AND DESIGNING

Kenneth Walter Horne
John Coble McCormick
Leon Cornell Weaver

ADVANCED DEGREES

Master of Science

IN AGRICULTURAL ECONOMICS

Josiah Evans Hull
Robin Murphy Williams

IN EDUCATION

Eliza Victoria Mial

IN CHEMICAL ENGINEERING

William Henry Ayscue
Gerald Thomas Perry
Edward Trapier Rogers
William Clark Wallin

IN CHEMISTRY

Carl Williams Kelley

PROFESSIONAL DEGREES

CHEMICAL ENGINEER

Charles Leroy Clark

CIVIL ENGINEER

Lawrence Duffy Bell

ELECTRICAL ENGINEER

Romie Lee Melton

CERTIFICATES OF MERITORIOUS SERVICE IN AGRICULTURE

Benjamin Bryan Everett
Clarence Poe
Leonard Tufts

HONOR STUDENTS—COMMENCEMENT, 1935

HIGH HONORS

Wilmer Eugene Barnes
James Harper Barnhardt
Howard Hilary Boling
Charles Wallace Bourne
Donald Augustus Brannon
Kenneth Phillips Brown
Eldon Edward Cox
Benjamin Bradley Culp
Felix Josef Czbator
Aaron Meyer Epstein
Thomas Branston Gardiner
James Jackson Griffith, Jr.
Arthur Frommer Hoffmann
William Harry Hoffman
Franklin Carlisle Johnson
Richard Farrell Lawrence
William Alfred Myatt, Jr.
Frederic Neville Newnham
Rufus Harry Page, Jr.
John Lewis Ponzer
Austin W. Robinson, Jr.
N. Christine Shepherd
Samuel Otha Spruill, Jr.
Virginia Tate
Fred Carter Williams

HONORS

Elizabeth McDowell Allen
Elliott Frederick Anderson
Beaty Lee Bass
Harold Funk Bishop
Willis Eldridge Boykin
J. Carlyle Castlebury
Clifford William Comfort
James Eugene Czel
Ernest Craig Dameron
Margaret Louise Echerd
Julian Carol Ewing
William B. Ferguson
Marshall Jennings Gardner
Irvin O. Garodnick
John Brice Graves
Villa Cline Herlocker
Frank Lafayette Hutchison
Aileen Jenrette
E. Lavelle Johnston
Jacob Andrews Lutz
William Rex McLain
Frank Hampton McKinney
Lawrence Alfred Martin
William Fabius Moody
David Wardlaw Morrah
Bruce Glenn Nanney
George Buren Peeler
Arnold Peterson
Sarah Kathryn Pierce
William Moring Porter
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David Rodwell
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William Schwartz
Joseph Edward Shaw, Jr.
Joseph Ralph Spratt
John Thomas Stanko
Carvel Clay Stapleford
Elmer Elwood Strickland
Joseph Louis Summers
Mills Monroe Tuttle
Boris Andruff Uzunoff
Hugh David Whitener
Maurice S. Wilkinson
James Howell Willett
Harry Raymond Wright
Holden Ely York

DEGREES CONFERRED—JULY, 1935

Bachelor of Science

AGRICULTURE

John Alfred Penland
Raymond F. Shearin

FORESTRY

Boyd Riney Kaler

AGRICULTURAL EDUCATION

William Howard Adams
Marion Lee Andrews
George Wilson Bland
Finley Gordon Lewis
Robert Stafford Sims
Guy Wheeler

HIGH SCHOOL TEACHING

Marion Hatcher Gatlin
Thomas McCain Hearne
Elizabeth Adams Owen
Charles Wesley Parrott, Jr.
Virginia Silver
Pauline Smith
Lucille Walkup
Marjorie Yates

ARCHITECTURAL ENGINEERING

Andrew Samuel Sabol

CERAMIC ENGINEERING

Edmund Jones, Jr.

CHEMICAL ENGINEERING

Theodore Franklin Abernethy
Clarence Warren Angline
Robert Milton Bruce
John William Memmert
William Vincent Ward
Wilbur Arnold Wright

CIVIL ENGINEERING

David Bertram Young

ELECTRICAL ENGINEERING

William Croft Harris

INDUSTRIAL ENGINEERING

Rafael Mendez

MECHANICAL ENGINEERING

Charles Lee Karr
Rodrigo Antonio Porras

MECHANICAL ENGINEERING AERONAUTICAL OPTION

William Ronald Campbell
Walter Little Smith

BUSINESS ADMINISTRATION

Pietro Joseph Luteri

BIOLOGY

William Luther White

INDUSTRIAL CHEMISTRY

Joseph Rogers Sutton

TEXTILE MANUFACTURING

Joseph Buford Hughes
Woodrow Wilson Lambeth
Joseph William Lineberger
Edwin Louis Sheffield

Master of Science

PHYSICS

Grady W. Bartlett

MEDALS AND PRIZES—COMMENCEMENT, 1935

INTERSOCIETY DECLAIMER'S MEDAL (AWARDED BY STATE COLLEGE)

H. D. Carpenter, Senior in Textiles, Lincolnton, N. C.

INTERSOCIETY ORATOR'S MEDAL (AWARDED BY STATE COLLEGE)

R. L. Batts, Senior in Chemical Engineering, Rocky Point, N. C.

NATIONAL ASSOCIATION OF TEXTILE MANUFACTURERS' MEDAL

D. A. Brannon, Senior in Textiles, Rockingham, N. C.

ASSOCIATED GENERAL CONTRACTORS' AWARD

J. E. Czel, Senior in Construction Engineering, Bridgeport, Conn.

ELDER P. D. GOLD CITIZENSHIP MEDAL

J. T. Stanko, Senior in High School Teaching, Steubenville, Ohio

ALUMNI ATHLETIC TROPHY

Ray W. Rex, Science and Business, Decatur, Ill.

SENIOR ORATOR'S MEDAL (AWARDED BY STATE COLLEGE)

R. L. Batts, Senior in Chemical Engineering, Rocky Point, N. C.

STRAWBERRY LEAF CHAMPIONSHIP DEBATE PRIZES

R. L. Batts, Senior in Chemical Engineering, Rocky Point, N. C.
S. B. Moss, Freshman in Science and Business, Albemarle, N. C.

SOUTHERN CHAMPIONSHIP CUP IN EXTEMPORANEOUS SPEAKING

R. L. Batts, Senior in Chemical Engineering, Rocky Point, N. C.

SOUTH ATLANTIC AND N. C. I. F. A. MEDAL IN AFTER-DINNER SPEAKING

S. B. Moss, Freshman in Science and Business, Albemarle, N. C.

SOUTH ATLANTIC CHAMPIONSHIP CUP IN ORATORY

R. L. Batts, Senior in Chemical Engineering, Rocky Point, N. C.

SOUTH ATLANTIC AND N. C. I. F. A. MEDAL IN EXTEMPORANEOUS SPEAKING

R. L. Batts, Senior in Chemical Engineering, Rocky Point, N. C.

STATE OF NORTH CAROLINA PRIZE IN AFTER-DINNER SPEAKING

S. B. Moss, Freshman in Science and Business, Albemarle, N. C.

MEDALS AND PRIZES—SCHOLARSHIP DAY, 1935

PHI KAPPA PHI SCHOLARSHIP MEDALS

Senior: Miss N. Christine Shepherd, High School Teaching, Raleigh, N. C.
Junior: Micou F. Browne, Business Administration, Raleigh, N. C.
Sophomore: D. W. Durham, Chemical Engineering, Carthage, N. C.

J. C. STEELE SCHOLARSHIP CUP

T. L. Hurst, Junior in Ceramic Engineering, Leonia, New Jersey

MOLAND-DRYSDALE SCHOLARSHIP CUP

W. W. Gaskins, Freshman in Ceramic Engineering, New Bern, N. C.

SCHOOL OF SCIENCE AND BUSINESS AWARD

Hal F. Daniels, Senior in Business Administration, Manteo, N. C.

ALPHA ZETA SCHOLARSHIP CUP

Amil J. Gerlock, Sophomore in Forestry, Mount Union, Pa.

SIGMA TAU SIGMA (TEXTILE) AWARD

D. A. Brannon, Senior in Textiles, Rockingham, N. C.

TAU BETA PI SCHOLARSHIP CUP

D. W. Durham, Sophomore in Chemical Engineering, Carthage, N. C.

WHITE SPADES SCHOLARSHIP CUP

W. A. Bain, Jr., Norfolk, Va., Alpha Kappa Pi Fraternity

FRATERNITY SCHOLARSHIP CUP

Alpha Kappa Pi

SIGMA PI ALPHA LANGUAGES AWARD

I. O. Garodnick, Senior in High School Teaching, Newark, N. J.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS AWARD

Y. A. Thorpe, Sophomore in Chemical Engineering, Wilmington, N. C.

ORDER OF 30 AND 3

J. R. Maedler, Freshman in Industrial Engineering, Palisades Park, N. J.

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Faculty Directory

North Carolina State College of Agriculture and Engineering *of the* University of North Carolina

---

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311 Kinsey Street. Phone 900-J.

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2811 Hillsboro Street.

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224 South Dormitory. Phone 9461.

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210 Chamberlain Street. Phone 1745-M.

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213 Woodburn Road. Telephone 827-M.

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20 Logan Court. Phone 609-W.

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25 Logan Court. Phone 2261.

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125 Chamberlain Street. Phone 3933-J.

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Brigman, H. P.—Clerk, Poultry Department. 214 Ricks Hall. Extension 70.
213 N. Bloodworth. Phone 2519-W.

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125 Chamberlain Street. Phone 2235-W.

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902 Brooks Avenue.

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Campbell, Mrs. Agnes—Boarding Department, Dining Hall.
316 Boundary Street.

Campbell, Dr. A. C.—College Physician, Infirmary. Office phone 687.
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Carson, W. M.—Loom Fixer, Textile School. Tompkins Hall. Extension 55.
Morrisville, N. C.

Case, Leland Irving—Extension and Research, Department of Animal Husbandry. 216 Polk Hall. Extension 63.
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2607 Vanderbilt Avenue.

Cell, John W.—Instructor, Department of Mathematics. 207 Page Hall. Extension 23.
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Clark, Joseph D.—Professor of English and Chairman of the Department. 106 Pullen Hall. Extension 108.
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Clarkson, Dr. J. M.—Assistant Professor of Mathematics. 6 Pullen Hall. Extension 8.
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Clevenger, Clinton B.—Professor of Soils, Department of Agronomy. 18 Patterson Hall. Extension 44.
202 Groveland Avenue. Phone 3948-W.

Clevenger, Reba Davis—Reference Librarian. Library Building. Extension 38.
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209 South Dormitory. Phone 9461.

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Bazemore, M. B	Sr. M. E	106 1211, Box 3706	Wilson, N. C.
Beam, Charles	Fr. Agr. Ed	307 7th, Box 3373	Lawndale, N. C.
Beam, J. W., Jr	So. Tex	214 7th, Box 3346	Spencer, N. C.
Beatty, Griffin R	Fr. M. E	202 4th, Box 3120	Stanley, N. C.
Beck, Wayne H	Fr. Ind. Mgt		Fuquay Sp'gs, N. C.
Beddow, C. A., Jr	So. Arch. E	330 1911, Box 3810	Stanford, Conn.
Beery, Clarence H., Jr	Fr. Ch. E	210 6th, Box 3258	Goldsboro, N. C.
Belgrad, Max M	Jr. Chem. E	116 Groveland Ave	New London, Conn.
Bell, Grady J	Fr. M. E	310 6th, Box 3270	Greenville, N. C.
Bell, John Cartwright, Jr.	So. Ind. Mfg	8 Maiden Lane	Windsor, N. C.
Bell, Lyndal T	Fr. E. E	104 South, Box 3504	Clinton, N. C.
Bell, William C	Jr. Cer. E	339 1911, Box 3819	Greensboro, N. C.
Bell, William M	So. Ind. Mgt	8 Maiden Lane	Windsor, N. C.
Bellamy, Glenn R	Sr. Tex. C. and D.	2220 Hillsboro St	Wilmington, N. C.

Name	Classification	School Address	Home Address
Belton, James A.	So. For.	203 Chamberlain St.	Draper, N. C.
Bennett, George S.	Fr. E. E.	304 7th, Box 3370	Reidsville, N. C.
Bennett, R. O.	Sr. For.	303 7th, Box 3369	Turkey, N. C.
Benton, Arthur M.	Fr. Agr.	10 South, Box 3606	Chadbourn, N. C.
Benton, James H.	Jr. Tex. Mfg.	115 Woodburn Road	Laurinburg, N. C.
Bergeron, Joseph N.	So. M. E.	203 Chamberlain St.	Spring Hope, N. C.
Berlinsky, Edward	So. H. S. T.	101 7th, Box 3301	Bloomfield, N. J.
Berry, C. M.	Fr. Tex.	113 7th, Box 5112	Spartanburg, S. C.
Betts, George Elmer, Jr.	Jr. M. E.	202 Watauga, Box 3020	Fayetteville, N. C.
Beverly, Ernest	Jr. For.	115 Woodburn Road	Laurinburg, N. C.
Biggers, Reginald W.	Fr. C. E.	316 7th, Box 3382	Hildebran, N. C.
Biggs, B. H.	Jr. Tex.	2412 Everett St.	Rockingham, N. C.
Biggs, Joseph D.	Fr. Ent.	220 Chamberlain St.	Washington, N. C.
Billings, H. E., Jr.	Jr. Tex. Mfg.	223 N. Wilmington St.	Raleigh, N. C.
Bing, Jack	Fr. Aero.	202 5th, Box 3214	Hickory, N. C.
Bing, John E.	Jr. Const.	128 1911, Box 3728	Hickory, N. C.
Bishop, Jimmy	Jr. Aero.	304 1911, Box 3784	Greensboro, N. C.
Black, Arthur H.	Sr. For.	324 7th, Box 3390	Scottdale, Penna.
Blackburn, A. R.	Jr. Cer. E.	311 1911, Box 3791	Wilson, N. C.
Blackmon, J. H.	Jr. Agr. Ed.	115 Chamberlain St.	Whiteville, N. C.
Blackwood, E. W.	Jr. Tex. Mfg.	310 Watauga, Box 5511	Cooleemee, N. C.
Blackwood, Robert S.	So. E. E.	316 Watauga, Box 3052	South Portland, Me.
Blake, Lewis V.	So. Agr. Spec.	204 1911, Box 3744	Watha, N. C.
Blalock, Paul C.	So. Chem. E.	2232 Hillsboro St.	Fremont, N. C.
Blanchard, William	Fr. C. E.	231 South, Box 3563	Rose Hill, N. C.
Blasi, Charles	Fr. Ind. Arts.	214 5th, Box 3546	Newark, N. J.
Blaylock, Clifford	Fr. Ind. Arts.	Cary, N. C.	Cary, N. C.
Bloch, Bertram	Sr. Tex.	2232 Hillsboro St.	New York City, N. Y.
Bloodgood, Richard	So. M. E.	17 Enterprise St.	Beaufort, N. C.
Blount, Fred	Ag. Ed.		
Blue, Howard	Fr. Agr.	104 4th, Box 3114	Mt. Airy, N. C.
Bobbitt, G. R., Jr.	So. Ind. Mgt.	225 7th, Box 3357	Nashville, N. C.
Bodwell, Paul G., Jr.	So. E. E.	322 Morrison Ave.	Raleigh, N. C.
Boele, Andre J.	Jr. E. E.	314 Watauga, Box 3050	Katonah, N. Y.
Boele, Karl A.	Fr. Biol.	314 Watauga, Box 3050	Katonah, N. Y.
Boger, Charles E. Jr.	Jr. Tex.	103 Chamberlain St.	Concord, N. C.
Baland, J. A., Jr.	Jr. Tex.	104 Watauga, Box 3004	Burlington, N. C.
Boling, H. H.	Grad. An. Hus.	224 South. Box 5127	Randleman, N. C.
Boling, Homer Thomas	So. An. Hus.	12 Enterprise St.	Randleman, N. C.
Bollendorf, W. R., Jr.	So. Chem. E.	116 Woodburn Road	Camphill, Pa.
Boney, George L., Jr.	So. Tex.	309 1911, Box 3789	Wallace, N. C.
Boney, John B., Jr.	So. E. E.	309 Watauga, Box 3045	Wallace, N. C.
Boney, Luke W.	So. Tex.	112 Watauga, Box 3012	Wallace, N. C.
Boney, John C.	Jr. Cost.	109 1911, Box 3709	Hamlet, N. C.
Boney, W. C.	Jr. M. E.	115 1911, Box 3715	Hamlet, N. C.
Borden, S. J.	So. Tex. T. & D.	203 Watauga. Box 3021	Wilson N. C.
Boseman, Robert R.	Fr. Gen. Agr.	312 South, Box 3576	Rocky Mount, N. C.
Bost, James H.	Fr. Agr.	305 4th, Box 3131	New London, N. C.
Bost, Lee Ross, Jr.	Fr. Agr.	208 4th, Box 3126	Salisbury, N. C.
Bostick, Frederick H.	Fr. Ind. Arts.	104 4th, Box 3114	Thompsonville, Conn.
Boswell, George P.	Fr. Tex.	207 5th, Box 3219	Burlington, N. C.
Boswell, H. S.	So. Agr. Ec.	219 7th, Box 3351	Burkeville, Va.
Boswell, J. R., Jr.	So. Agr. Spec.	2702 Hillsboro St.	Summerfield, N. C.
Bounous, E. P.	Sr. Aero. E.	301 Watauga, Box 3037	Valdese, N. C.
Bourne, Robert G. B.	Jr. M. E. (Aero)	213 Woodburn Road	Haddon H'ghts, N. J.
Bowen, John H., Jr.	Fr. Chem. E.	107 South, Box 3507	Hamlet, N. C.
Bowen, William Claudius	Jr. Tex. W and D.	2405 Clark Ave.	Smithfield, N. C.
Bowers, T. L.	So. Tex.	116 1911, Box 3716	Charlotte, N. C.
Bowlin, William A.	Fr. Agr.	310 5th, Box 3234	Ayden, N. C.

Name	Classification	School Address	Home Address
Bowling, Harry L.	Sr. Ind. Arts	137 1911, Box 3737	Leaksville, N. C.
Boykin, James A., Jr.	So. Aero. E.	315 Watauga, Box 3051	Darlington, S. C.
Boykin, John R.	Sr. E. E.	237 1911, Box 3777	Charlotte, N. C.
Boyles, John S.	So. Agr. Ec.	Western Blvd., Box 5394	Charlotte, N. C.
Boyles, S. J., Jr.	Sr. Chem. E.	2407 Clark Ave., Bx 5428	Winston-Salem, N. C.
Bradham, Robert W.	So. M. E.	315 Watauga, Box 3051	Rocky Mount, N. C.
Bradley, Herman A.	Fr. For.	Gymnasium, Box 5402	Rocky Mount, N. C.
Bradley, James R.	So. Ed. Agr.	6 Ferndell Lane	Seaboard, N. C.
Bragaw, H. C.	Jr. For.	220 Chamberlain St.	Washington, N. C.
Brake, Henry L.	So. Agr. Spec.	Greenhouse, Box 5254	Rocky Mount, N. C.
Branch, Mary O'Neal	Fr. H. S. T.	317 Calvin Road	Raleigh, N. C.
Braswell, George Thomas	Fr. E. E.	101 4th, Box 3111	Rocky Mount, N. C.
Braswell, George Troy	Fr. M. E.	204 5th, Box 3216	Rocky Mount, N. C.
Brawley, J. P.	Fr. Tex.	1720 Hillsboro St.	Charlotte, N. C.
Brawley, Price L.	Fr. Agr.	1622 Park Drive	Mooresville, N. C.
Brawley, William K.	So. Ind. Mgt.	114 South, Box 5512	Mt. Ulla, N. C.
Brennan, Mortimer C.	So. M. E.	117 Watauga, Box 3017	Port Chester, N. Y.
Brickhouse, W. H.	Sr. For.	222 Park Ave.	Columbia, N. C.
Bridges, W. J., Jr.	Jr. For.	140 1911 Box 3740	Charlotte, N. C.
Brigman, Eugene	Fr. Agr.	105 5th Box 3205	Barnardsville, N. C.
Bristol, Jack	Fr. For.	106 6th, Box 3242	Andrews, N. C.
Britt, Charles S., Jr.	Fr. Agr.	4 E. Lane Street	Raleigh, N. C.
Britt, J. M.	Sr. B. Ad.	222 Park Ave.	Newton Grove, N. C.
Brock, John Koonce	Fr. Gen. Agr.	308 7th, Box 3374	Trenton, N. C.
Brockwell, K. H.	Jr. Ind. Engr.	726 W. Hargett St.	Raleigh, N. C.
Bronson, James Garland	So. Chem. E.	125 1911, Box 3725	Durham, N. C.
Brooks, C. T., Jr.	Jr. B. A.	1720 Hillsboro St.	Newport News, Va.
Brooks, Leslie Clifford	Fr. E. E.	317 7th, Box 3383	Bryson City, N. C.
Brooks, Sam W.	So. Tex.	109 Oberlin Road	Wake Forest, N. C.
Broome, B. B.	Sr. Agr. Ed.	2411 Everett Ave.	Monroe, N. C.
Brothers, Roy C.	Fr. Chem. E.	2314 Hillsboro St.	Elizabeth City, N. C.
Brown, Arthur W.	Sr. Ind. Chem.	1805 St. Mary's St.	Raleigh, N. C.
Browne, E. B.	So. Agr. Ed.	1715 Park Drive	Raleigh, N. C.
Brown, Frank H., Jr.	Fr. Chem. E.	207 1911, Box 3747	Cullowhee, N. C.
Brown, Glenn C.	So. For.	224 7th, Box 3356	Hickory, N. C.
Brown, Harry J.	Sr. C. E.	2513 Clark Ave.	Snow Hill, N. C.
Brown, Henry G.	So. Agr. Econ.	2612 Clark Ave.	Belcross, N. C.
Browne, Henry R.	Fr. M. E. (Aero.)	306 4th, Box 3132	Hickory, N. C.
Brown, Herbert Julian, Jr.	So. Tex.	2230 Hillsboro St.	Ahoskie, N. C.
Brown, Jack M.	Sr. Const. Eng.	102 1911, Box 3702	Burlington, N. C.
Brown, James Everett	Fr. Agr.	302 7th, Box 3368	Rich Square, N. C.
Brown, John D.	Fr. E. E.	302 5th, Box 3226	Davidson, N. C.
Brown, John T., Jr.	Sr. E. E.	201 Watauga, Box 3019	Burgaw, N. C.
Brown, John William	Jr. Const.	3 Hope Street	Shelby, N. C.
Brown, Lloyd N.	Jr. Tex. C.	327 1911, Box 3807	Charlotte, N. C.
Brown, Lawrence M.	Fr. M. E. (Aero.)	131 South, Box 3531	Burgaw, N. C.
Brown, M. F.	Sr. B. Ad.	1715 Park Drive	Raleigh, N. C.
Brown, Paul P., Jr.	Jr. Ind. Mgt.	1805 St. Mary's St.	Raleigh, N. C.
Brown, Perry S.	Fr. L. Arch.	304 South, Box 3568	Lillington, N. C.
Brown, Robert Carlton	Fr. Agr.	227 South, Box 3559	Rocky Mount, N. C.
Brown, Walter H.	So. Tex. C. & D.	203 Chamberlain St., Box 5412	Davidson, N. C.
Brownie, Cecil	So. H. S. T.	116 7th, Box 3316	White Plains, N. Y.
Browning, C. R.	Jr. E. E.	1012 Harvey St.	Raleigh, N. C.
Browning, George K.	Fr. M. E.	1000 W. Cabarrus St.	Raleigh, N. C.
Browning, Robert Cooper	Fr. C. E.	101 E. Whitaker Mill Rd	Raleigh, N. C.
Bruinooge, Henry	Fr. Tex.	207 6th, Box 3255	Hasbrouck Hts., N. J.
Bruinooge, Peter	Fr. Tex. Mfg.	206 6th, Box 3254	Hasbrouck Hts., N. J.
Brunson, Edgar C.	Fr. Tex.	204 5th, Box 3216	Blakely, Ga.

Name	*Classification*	*School Address*	*Home Address*
Bruton, James Kenneth	Jr. Tex.	2407 Clark Ave.	Mt. Gilead, N. C.
Buchanan, E. T., Jr.	Fr. C. E.	3 Hope St.	Sanford, N. C.
Buchanan, J. T.	Sr. Bus.	Dining Hall, Box 5133	Sanford, N. C.
Buffaloe, A. Russell	Sr. H. S. T.	Apex, N. C., Route 1	Apex, N. C.
Buffaloe, J. Kenneth	So. Chem. E.	Raleigh, N. C., Route 5	Raleigh, N. C.
Bugg, S. M.	Jr. H. S. T.	113 7th, Box 3313	Angier, N. C.
Bullock, John B.	Fr. E. E.	111 6th, Box 3247	Henderson, N. C.
Bundy, James B.	So. Chem. E.	139 1911, Box 3739	Mebane, N. C.
Bundy, Otis C., Jr.	Fr. Tex.	326 South, Box 3590	Jamestown, N. C.
Bunn, George	Fr. Ind. Mgt.	310 5th, Box 3234	Kenly, N. C.
Bunn, George Roger	Fr. Tex.	228 7th, Box 3360	Rocky Mount, N. C.
Bunn, R. M.	Fr. Agr. Ed.	228 7th, Box 3360	Rocky Mount, N. C.
Buntin, Robert B.	Fr. Agr. Eng.	117 South, Box 3517	South Boston, Va.
Burcham, James R.	Fr. Tex.	208 6th, Box 3256	Elkin, N. C.
Burchette, James D.	Fr. Chem. Eng.	208 5th, Box 3220	Winston-Salem, N. C.
Burns, D. F., Jr.	So. Tex. Mgt.	103 Chamberlain St.	Durham, N. C.
Burns, G. D.	Sr. Agr. Ed.	2612 Clark Ave.	Wadesboro, N. C.
Burr, William C.	Fr. Arch. Eng.	331 South, Box 3595	Philadelphia, Pa.
Burt, B. S.	Sr. E. E.	125 N Salisbury St.	Raleigh, N. C.
Burton, W. H., Jr.	So. Tex.	1716 Park Drive	Mebane, N. C.
Butler, A. E., Jr.	So. For.	531 N. East St.	Raleigh, N. C.
Butler, Charles M.	Jr. Agr. Ed.	222 Park Ave.	Clinton, N. C.
Butler, E. G.	So. Agr. Econ.	117 Forest Road	Clinton, N. C.
Butler, H. B.	So. Agr. Ed.	222 Park Ave.	Clinton, N. C.
Butler, J. C.	Sr. M. E.	117 Forest Road, 5471	Clinton, N. C.
Butler, W. E.	So. Agr. Eng.	3 Maiden Lane	Vanceboro, N. C.
Butler, W. S.	So. Agr. Ed.	222 Park Ave.	Clinton, N. C.
Butterfield, Reeder	Fr. C. E.	311 7th, Box 3377	Hawthorne, N. J.
Buys, William O.	So. C. E.	230 E. Morgan St.	Washington, N. C.
Bynum, W. L.	Jr. Ind. Mgt.	811 N. Bloodworth St.	Raleigh, N. C.
Byouk, Melba	Jr. H. S. T.	303 Hillcrest Road	La Veta, Colorado.
Byrd, Everett W.	Fr. Agr.	19 South, Box 3615	Whiteville, N. C.
Byrd, Henry C.	Jr. E. E.	319 1911, Box 3799	Wilmington, N. C.
Byrum, J. W.	Sr. E. E.	216 1911, Box 3756	Tyner, N. C.
Cabe, H. W.	Jr. H. S. T.	14 South, Box 3610	Canton, N. C.
Caldwell, John R.	Fr. Agr.	206 5th, Box 3218	Matthews, N. C.
Caldwell, M. G.	So. Ind. Mgt.	128 N. Harrington St.	Dillon, S. C.
Caldwell, W. C.	Fr. Chem. Eng.	1710 Hillsboro St.	Charlotte, N. C.
Callaway, William Cecil	Sr. B. Adm.	201 6th, Box 3249	Sherrills Ford, N. C.
Callihan, C. E.	Jr. Agr. Ed.	1 College Court Apts. Box 5163	Whiteville, N. C.
Callihan, W. B.	Grad. Agr. Ed.	Wendell, N. C.	Whiteville, N. C.
Cameron, A. C.	So. Tex.	13 Dixie Trail	Olivia, N. C.
Campbell, C. M., Jr.	Sr. Chem. E.	222 7th, Box 3354	Mocksville, N. C.
Campbell, J. H.	So. Agr. Ed.	5 Infirmary, Box 5533	Taylorsville, N. C.
Campbell, James S.	So. For.	108 Watauga, Box 3008	Franklin, Va.
Campbell, Roy A.	Fr. E. E.	230 South, Box 3562	Fremont, N. C.
Campbell, W. Allan	So. For.	1108 Glenwood Ave.	Swannanoa, N. C.
Canady, Joe L., Jr.	Sr. C. E.	103 Chamberlain St.	Wilmington, N. C.
Canady, Maurice F.	Fr. Chem. Eng.	103 Chamberlain St.	Wilmington, N. C.
Cara, Dominic	Fr. H. S. T.	125 7th, Box 5192	Bellaire, Ohio.
Card, Thomas Richard	Fr. Cer. E.	313 Maywood Ave.	Raleigh, N. C.
Carlisle, William M.	So. Tex.	205 Watauga, Box 3022	Rahway, N. J.
Carpenter, J. L.	Jr. Agr. Ed.	222 Clark Ave.	Lincolnton, N. C.
Carr, J. D.	Jr. Agr. Econ.	105 Watauga, Box 3005	Clinton, N. C.
Carraway, Glenn M.	Fr. E. E.	9 South, Box 3802	Merrimon, N. C.
Carraway, J. B.	Fr. Gen. Agr.	1½ S. Person St.	Raleigh, N. C.
Carter, W. L.	Fr. Tex. C&D.	328 South, Box 3592	Franklinville, N. C.
Carver, Irvin L.	Fr. E. E.	309 6th, Box 3269	Durham, N. C.

Name	*Classification*	*School Address*	*Home Address*
Castlebury, Frank D.	Fr. E. E.	R.F.D. 4	Raleigh, N. C.
Cates, Thomas Willard	Fr. Tex.		Wendell, N. C.
Catlin, James T., III	So. Tex.	21 Enterprise St.	Danville, Va.
Caton, M. Odell	So. C. E.	216 Watauga, Box 3034	Ayden, N. C.
Caton, T. O.	Jr. Tex. Mfg.	216 Watauga, Box 3034	Ayden, N. C.
Caudill, James E.	So. Ind. Mgt.	229 7th, Box 3361	N. Wilkesboro, N. C.
Chalk, W. B.	So. Tex.	2004 Hillsboro St.	Morehead City, N. C.
Chambers, W. L.	So. Ind. Mgt.	2302 Hillsboro St.	Winston-Salem, N. C.
Chamblee, D. D.	Fr. For.	2 South, Box 3598	Zebulon, N. C.
Chandler, F. S.	Jr. C. E.	1609 Hillsboro St.	Barber, N. C.
Chaplin, Norman B.	Sr. Aero.	S Ferndell Lane	S. Weymouth, Mass.
Chapman, J. R.	Sr. Tex. Mfg.	208 1911, Box 3748	Dover, N. C.
Chapman, J. W.	Fr. Tex.	208 1911, Box 3748	Dover, N. C.
Chapman, Walter J.	Jr. Aero. Eng.	201 Watauga, Box 3019	Walsenburg, Colo.
Chappell, Murray J.	So. For.	College Court Apts.	Edenton, N. C.
Cherevko, A. S.	Jr. M. E.	234 7th, Box 3366	Brooklyn, N. Y.
Cheshire, W. E.	Jr. C. E.	12 Enterprise St.	Fayetteville, N. C.
Cheslock, Charles J.	So. For.	116 Woodburn Road	Orbisonia, Pa.
Chesnutt, Max P.	Fr. Agr. Ed.	320 South, Box 3584	Turkey, N. C.
Chiemiego, Albert A., Jr.	Jr. H. S. T.	127 7th, Box 5332	Burlington, N. J.
Childs, Sam J., Jr.	Jr. Agr. Econ.	323 1911, Box 3803	Hendersonville, N. C.
Chomin, Harry T.	Sr. B. Ad.	205 Ashe Ave.	Dunmore, Pa.
Chudzik, Stanley A.	Jr. Chem.	205 Ashe Ave.	Clifton, N. J.
Church, Edward J.	Fr. Ind. E.	327 South, Box 3591	Salisbury, N. C.
Clancy, E. Irvin	So. C. E.	1408 Hillsboro St.	Washington, N. C.
Clapp, B. S.	So. Ind. Arts.	Gymnasium, Box 5392	Siler City, N. C.
Clark, Charlie Clifton	Fr. Agr.	3 Maiden Lane	Durham, N. C.
Clark, Claude E., Jr.	So. Tex.	21 Enterprise St.	Danville, Va.
Clark, Clyde W.	So. Ind. Chem.	2407 Clark Ave.	Clarkton, N. C.
Clark, Gilbert W.	So. Ind. Mgt.	324 1911, Box 3804	High Point, N. C.
Clark, Hubert A.	So. H. S. T.	122 7th, Box 3322	Beverly, Mass.
Clark, K. W.	Jr. Ind. Mgt.	2405 Clark Ave.	Wilmington, N. C.
Clark, Norman N.	So. M. E.	206 Watauga, Box 3024	Allerton, Mass.
Clark, Richard S.	So. Land. Arch.	112 1911, Box 3712	Winston-Salem, N. C.
Clark, Russell B.	Fr. Ind. Eng.	2405 Clark Ave.	Wilmington, N. C.
Clarke, Raymond T.	Grad. Tex. C&D.	225 Forest Road	Anderson, S. C.
Clayton, Sam, Jr.	So. Tex.	129 1911, Box 3729	Greensboro, N. C.
Cline, Walter T., Jr.	Fr. Cer. E.	205 Chamberlain St.	Raleigh, N. C.
Clodfelter, Charles M.	Fr. For.	315 South, Box 3579	Lexington, N. C.
Cloud, C. L.	Jr. M. E.	129 W. Park Drive	Hamlet, N. C.
Cloud, Jess W.	Fr. Agr.	3 South, Box 3599	Broadway, N. C.
Coachman, F. L.	Sr. Gen. Bus.	1301 Hillsboro St.	Moravian Falls, N. C.
Coats, E. F.	Sr. H. S. T.	119 N. Person St.	Raleigh, N. C.
Coates, Lacy W.	So. Agr. Ec.	12 Enterprise St.	Smithfield, N. C.
Cobb, W. D., Jr.	Fr. Agr. Spec.	115 South, Box 3515	La Grange, N. C.
Coble, Edwin L.	So. Arch. Eng.	224 N. Person St.	Raleigh, N. C.
Cochran, Edward K.	Fr. E. E.	214 South, Box 3546	Star, N. C.
Cockerham, Neal J.	Fr. Agr.	Gymnasium	Dobson, N. C.
Cockman, J. W.	Jr. Tex. Mgt.	1922 Hillsboro St.	Rockingham, N. C.
Cohan, E. A.	So. Bio.	116 Groveland Ave., Box 5371	Brooklyn, N. Y.
Cole, William Garvin, Jr.	Sr. Cer. E.	1301 Hillsboro St.	Canton, N. C.
Coleman, J. M.	Jr. C. E.	1800 St. Mary's St.	Raleigh, N. C.
Coleman, Robert, Jr.	Fr. Chem. E.	211 6th, Box 3259	Birmingham, Ala.
Coleman, Robert F.	Fr. C. E.	316 South, Box 3580	Wilmington, N. C.
Colton, James T.	So. Zool.	715 Munford Ave.	Raleigh, N. C.
Colucci, John	Fr. Ind. E.	211 South, Box 3543	Wilmington, N. C.
Colvin, David	Fr. C. E.	705 E. Franklin St.	Raleigh, N. C.
Colwell, Charles E.	Fr. Chem. Eng.	306 7th, Box 3372	Wilmington, N. C.

Name	*Classification*	*School Address*	*Home Address*
Colwell, Wilmer L., Jr.	So. For.	240 1911, Box 3780	Washington, D. C.
Combs, A. B., Jr.	Jr. Aero.	2238 Circle Drive	Raleigh, N. C.
Comolli, Felix	Sr. Const. Eng.	2405 Clark Ave.	Elberton, Ga.
Comolli, Mario	Jr. Ind. Mgt.	301 Watauga, Box 3037	Elberton, Ga.
Connell, F. L.	Jr. M. E.	117 1911, Box 3717	Mt. Holly, N. C.
Conner, Posie C.	So. For.	104 Logan Street	Buffalo Ridge, Va.
Conrad, C. G.	Jr. Ind. Mgt.	126 7th, Box 3326	Greensboro, N. C.
Cook, F. W.	Grad. Poul.	4 Maiden Lane	
Cooke, Henry C.	Jr. H. S. T.	821 Hillsboro St.	Poughkeepsie, N. Y.
Coon, Edward H., Jr.	Fr. C. E.	117 7th, Box 3317	Watertown, Conn.
Cooper, Harry L.	Jr. Arch. E.	17 Enterprise St.	Nashville, N. C.
Cooper, Percy H.	Sr. H. S. T.	215 Watauga, Box 3033	Greensboro, N. C.
Cooper, S. P., Jr.	Fr. Agr.	118 South, Box 3518	Henderson, N. C.
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Copeland, J. D.	So. Gen. Ag.	602 Dixie Trail	High Point, N. C.
Copeland, J. G., Jr.	Sr. Chem. E.	119 1911, Box 3719	Fremont, N. C.
Copley, Lewis L.	Fr. E. E.	309 6th, Box 3269	Rougemont, N. C.
Corbett, William F.	Jr. Tex.	2402 Hillsboro St.	Wilmington, N. C.
Corey, James Harold	Fr. E. E.	327 South, Box 3591	Rocky Mount, N. C.
Corpening, W. A.	Sr. An. P.	239 1911, Box 3779	Horse Shoe, N. C.
Correll, Russel Lee	Fr. Agr.	Greenhouse, Box 5254	Cleveland, N. C.
Council, James B.	Fr. For.	103 6th, Box 3239	Hallsboro, N. C.
Covington, I. B., Jr.	Sr. Tex.	2232 Hillsboro St.	Wadesboro, N. C.
Cowan, Bessie M.	Grad. Ag. Ec.		Statesville, N. C.
Cox, J. W.	Fr. Ind. Eng.	108 4th, Box 3118	Corolla, N. C.
Cox, Paul M.	Sr. Ag.	111 1911, Box 3711	Newport News, Va.
Cox, Ralph L.	Fr. M. E.	205 South, Box 3537	Four Oaks, N. C.
Cox, Roy T., Jr.	So. Agr. Ec.	31 Shepard St.	Winterville, N. C.
Cox, Rupert L.	Sr. Chem. Eng.	600 Willard Place	Raleigh, N. C.
Craig, Locke	Jr. For.	110 Vance Apts.	Raleigh, N. C.
Crandall, H. M.	Sr. For.	221 1911, Box 3761	Dixiana, Ala.
Crane, Lester R.	So. E. E.	At home. Route 1	Raleigh, N. C.
Craven, George	So. Agr. Ec.	203 7th, Box 3335	Clarkton, N. C.
Craven, W. J., Jr.	Fr. Tex.	301 4th, Box 3127	Mt. Gilead, N. C.
Craven, W. L.	Sr. Tex.	618 Hillsboro St.	Sanford, N. C.
Crawford, H. R.	Fr. M. E. (Aero.)	4 South, Box 3600	Henderson, N. C.
Crawford, Hugh A.	Fr. For.	2412 Everette Ave.	Statesville, N. C.
Crawford, M. Hutchens	Fr. M. E.	210 5th, Box 3222	Wilson, N. C.
Crawley, William P.	So. M. E.	207 Watauga, Box 3025	Littleton, N. C.
Creech, Harvey T.	Fr. Ag.	213 South, Box 3545	Smithfield, N. C.
Creel, W. C.	Sr. H. S. T.	Route 4	Raleigh, N. C.
Crews, W. E.	Jr. Chem. E.	115 1911, Box 3715	Hamlet, N. C.
Crist, E. Vincent	Jr. Biol.	227 7th, Box 3359	Timberville, Va.
Croll, Gilbert Holladay	Fr. Ag. Ed.	205 4th, Box 3123	Ridgewood, N. J.
Croom, Clifton A.	Sr. Aero. Eng.	124 South, Box 5276	Bolton, N. C.
Crosland, Robert Brown	So. M. E.	2513 Clark Ave.	Charlotte, N. C.
Crouch, Fred F.	Fr. Chem. E.	501 E. Franklin St.	Raleigh, N. C.
Culp, Max A.	Sr. Agr. Spec.	516 Daughtridge St.	Mooresville, N. C.
Cunningham, E. B.	Fr. Gen. Ag.	215 Linden Ave.	Raleigh, N. C.
Cunningham, Francis C.	Fr. Ind. E.	1615 Fairview Road	Raleigh, N. C.
Cunningham, Roy R.	So. H. S. T.	1615 Fairview Road	Raleigh, N. C.
Currie, George H.	Jr. B. Adm.	129 W. Park Drive	Clarkton, N. C.
Currie, R. A.	Sr. Ag. Ed.	2512 Clark Ave.	Raeford, N. C.
Curry, J. Frank	Jr. Chem. E.	116 Woodburn Road	Lebanon, Tenn.
Curtis, Edward H.	Jr. Tex.	106 1911, Box 3706	Climax, N. C.
Curtis, Stanley G.	So. H. S. T.	212 Watauga, Box 3030	Ossipee, N. H.
Cutchin, William H.	Jr. Gen. Agr.	215 Park Ave.	Franklin, Va.
Cuthrell, H. M.	Jr. Sp. Agr.	207 1911, Box 3747	Camden, N. C.
Cyrus, H. N.	So. E. E.	218 7th, Box 3350	Rocky Mount, N. C.

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Dale, C. K.	Fr. For.	307 6, Box 3267	Portsmouth, Va.
Dalrymple, Neill M.	Jr. Tex. Mfg.	308 7th, Box 5392	Jonesboro, N. C.
Daly, O. A.	So. M. E.	14 Hillsboro Apts.	Raleigh, N. C.
Dameron, J. T.	Jr. H. S. T.	4 College Court Apts.	Star, N. C.
Dammann, Arthur	So. Cer. E.	330 1911, Box 3810	Amityville, N. Y.
Daniel, David Ray	Jr. Ind. Mgt.	201 1911, Box 3741	Salisbury, N. C.
Daniels, George B.	Sr. E. E.	307 1911, Box 3787	Rocky Mount, N. C.
Daniels, James William	Fr. Cer. Eng.	215 Park Ave.	Goldsboro, N. C.
Darden, William Carr	Fr. E. E.	2224 Hillsboro St.	Greenville, N. C.
Dargan, L. M.	So. For.	220 7th, Box 3352	Darlington, S. C.
Darst, Williard H., Jr.	Sr. E. E.	1609 Park Drive	Raleigh, N. C.
Daughtery, Rudolph	Fr. Agr. Ed.	1120 Filmore St.	Smithfield, N. C.
Daughtridge, R. L.	Fr. Agr.	207 South, Box 3539	Rocky Mount, N. C.
Daughtry, J. Malcolm	Fr. For.	Swaine Apt.	Roanoke Rapids, N.C.
Daughtry, James F.	So. Biol.	310 Stanhope Ave.	Raleigh, N. C.
Daves, A. H., Jr.	Sr. B. Ad.	2407 Clark Ave.	Winston-Salem, N. C.
Davidson, Forest Murray	So. Tex.	301 1911, Box 3781	Gibsonville, N. C.
Davidson, Jack B.	So. Agr.	Poultry Plant	Swannanoa, N. C.
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Davis, Merritt	Fr. Tex.	102 South, Box 3502	Charlotte, N. C.
Davis, N. C.	So. Ind. Mgt.	1922 Hillsboro St.	Elizabeth City, N. C.
Davis, Paul L.	Jr. For.	2316 Hillsboro St.	Waynesville, N. C.
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Davis, Richard L.	So. Chem. E.	301 Park Ave.	Charlotte, N. C.
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Delamar, C. D.	Jr. Chem. E.	133 1911, Box 3733	Durham, N. C.
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Devane, J. Loftin	Fr. Tex.	17 South, Box 3613	Tomahawk, N. C.
Dewar, Sam D.	Jr. Ag. Ed.	College Court, Apt. 1	Fuquay Sp'gs., N. C.
Deyton, John M.	Jr. For.	1817 White Oak Road	Green Mount, N. C.
Diaz, Rodolfo	So. Aero. E.	214 7th, Box 3346	San Juan, Puerto Rico.
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Dickinson, J. E., Jr.	Jr. E. E.	213 7th, Box 3345	Mooresville, N. C.
Diehl, Kenneth C.	Sr. Arch. E.	425 N. Bloodworth St.	Philadelphia, Pa.
Dillard, Olin S.	Sr. B. Ad.	10 Enterprise St.	Candler, N. C.
Dillingham, Max	So. For.	1809 Sunset Road	Barnardsville, N. C.
Dilling, Marshall, Jr.	So. Tex. Mfg.	316 Watauga, Box 3052	Gastonia, N. C.
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Dixon, Donald C.	Sr. For.	324 7th, Box 3390	Pittsburgh, Pa.

Name	*Classification*	*School Address*	*Home Address*
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Doak, Eleanor D.	So. H. S. T.	130 Woodburn Road	Raleigh, N. C.
Dobbins, G. B.	Jr. Chem. E.	619 Aycock St.	Raleigh, N. C.
Dodson, J. C.	Fr. For.	312 5th, Box 3236	Marshall, N. C.
Dorsey, Hugh Dood.	Sr. Const. E.	Gymnasium, Box 5392	Cartersville, Ga.
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Doub, Albert, Jr.	Fr. For.	3016 White Oak Road	Raleigh, N. C.
Dozier, John E., Jr.	Fr. Chem. Eng.	1910 Fairview Road	Raleigh, N. C.
Dozier, Needham B., Jr.	Sr. B. Ad.	301 6th, Box 3261	Rocky Mount, N. C.
Dreswick, Stanley A.	So. H. S. T.	123 South 3523	Bound Brook, N. J.
Driver, Malcolm M.	Fr. Mech. E.	204 South, Box 3536	Dunn, N. C.
Drye, R. J.	Jr. Ag. Ed.	208 7th, 3340	Oakboro, N. C.
Dudley, Hubert James	Sr. B. Ad.	116 N. Dawson St.	Vanceboro, N. C.
Duff, James MacNeally	Fr. Cer.	21 Enterprise	Elizabeth City, N. C.
Duff, William P., Jr.	Fr. Cer.	21 Enterprise	Elizabeth City, N. C.
Duguid, Helen	So. H. S. T.	Cary, N. C., Route 2	Fayetteville, N. C.
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Dunn, Frank E.	Fr. Ag.	Gymnasium, Box 5392	Candor, N. C.
Dunn, Fred N.	Fr. Agr.	Gymnasium, Box 5392	Candor, N. C.
Dunn, J. F.	Sr. Tex.	208 Chamberlain St.	Rocky Mount, N. C.
Dunn, R. W.	Jr. Tex.	208 Chamberlain St.	Rocky Mount, N. C.
Dunnagan, C. R.	So. Tex. Mfg.	620 Aycock St.	Yadkinville, N. C.
Durham, Dwight W.	Jr. Chem. E.	6 Enterprise	Carthage, N. C.
Durland, James C.	Fr. Tex.	302 4th, Box 3128	High Point, N. C.
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Eaker, Roy	So. For.	222 Park Ave.	Cherryville, N. C.
Earley, Clarence	Fr. Agr.	226 South, Box 3558	Rutherfordton, N. C.
Edge, N. P., Jr.	Jr. For.	223 1911, Box 5261	Rocky Mount, N. C.
Edgerton, Henry E.	Fr. M. E.	1 South, Box 3597	Faison, N. C.
Edmonson, Norman V.	Sr. Ch. E.	340 1911, Box 3820	New Bedford, Mass.
Edmonson, R. T.	Jr. Ind. Mgt.	1301 Hillsboro St.	Washington, N. C.
Edwards, Charles M.	Fr. Tex.	102 5th, Box 3202	Stamford, N. Y.
Edwards, J. R.	Sr. Tex.	1922 Hillsboro	High Point, N. C.
Edwards, L. V., Jr.	Fr. C. E.	119 South, Box 3519	Biscoe, N. C.
Edwards, Richard	Fr. Land. Arch.	524 W. Morgan St.	Raleigh, N. C.
Edwards, Robert L.	Fr. Agr. Ed.	205 South, 3537	Spring Hope, N. C.
Edwards, William A.	Jr. Agr.	131 7th, Box 3331	Danville, Va.
Edwards, William Archie.	Fr. C. E.	236 1911, Box 3776	Princeton, N. C.
Edward, Winslow	Fr. C. E.	201 Hillsboro St.	Raleigh, N. C.
Elam, A. B., Jr.	Jr. Tex. C&D.	221 7th, Box 3353	High Point, N. C.
Ellen, Bruce P.	Sr. Chem. Eng.	325 1911, Box 3805	Mars Hill, N. C.
Ellington, Edwin D.	Fr. Gen. Agr.	112 6th, Box 3248	Graham, N. C.
Ellington, M. J.	Fr. Chem. Eng.	2710 Everett Ave.	Raleigh, N. C.
Elliott, R. F.	Fr. M. E.	127 South, Box 3527	Rich Square, N. C.
Ellis, Wilson Hamit.	Fr. Cer. E.	226 South, Box 3558	Henderson, N. C.
Emin, Ali	Sr. Tex.	308 1911, Box 3788	Nazilli, Turkey
Emmart, W. T.	Sr. Ag. Econ.	2230 Hillsboro St.	Winston-Salem, N. C.
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Evans, Ronald	Fr. Agr.	5 Hope Street	Harbinger, N. C.
Evans, R. Hugh	Sr. Agr. Spec.	108 1911, Box 3708	Greenville, N. C.
Evans, W. G.	So. For.	1618 Hillsboro St.	Wilmington, N. C.
Everington, J. H.	Fr. Const. Eng.	314 South, Box 3578	Thomasville, N. C.
Fabrizi, A. P.	So. C. E.	Ferndell Lane, Box 5244	Geneva, N. Y.
Fallon, James, Jr.	Sr. Ch. E.	122 1911, Box 3722	E. Rutherford, N. J.
Falls, Henry S.	Jr. Tex. (T&D)	1301 Hillsboro	Fallston, N. C.
Falsone, Larry	Fr. Ind. Arts	315 South, Box 3579	Mt. Morris, N. Y.
Fanning, Walter Lee	Fr. Tex.	122 South, 3522	Shelby, N. C.
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Faris, Claude B., Jr.	Fr. Agr.	313 E. Lane St.	Raleigh, N. C.
Farless, Leonard	Fr. Agr.	132 South, Box 3532	Merry Hill, N. C.
Farrar, Venice	Jr. B. Ad.	125 7th, Box 5192	Youngstown, Ohio.
Farrior, Joseph A., Jr.	Fr. Agr.	306 5th, Box 3230	Wallace, N. C.
Farrior, Julian Wade	So. For.	212 1911, Box 3752	Burgaw, N. C.
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Fennell, James LeRoy	Fr. Aero. E.	329 South, Box 3593	Wilmington, N. C.
Fentress, Clyde D.	Fr. For.	322 South, Box 3586	Maribel, N. C.
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Findlay, J. H.	So. For.	103 Chamberlain St.	Charlotte, N. C.
Firesheets, Charles L.	Fr. Land. Const.	204 6th, Box 3252	Reidsville, N. C.
Fisher, F. Herbert	Jr. Ind. Mgt.	312 Chamberlain St.	Raleigh, N. C.
Fisher, John H.	Fr. For.	203 6th, Box 3251	Salisbury, N. C.
Fisher, W. H.	So. M. E.	104 1911, Box 3704	Brasstown, N. C.
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Fleming, A. F., Jr.	So. Ind. Mgt.	316 Watauga, Box 3042	Grimesland, N. C.
Fleming, C. J., Jr.	So. Aero. E.	2 Hope St.	Henderson, N. C.
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Forsythe, W. Craig, Jr.	Jr. M. E.	131 1911, Box 3731	Hendersonville, N. C.
Fort, J. D.	Fr. Agr. Econ.	105 Watauga, Box 3005	Clinton, N. C.
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Fox, John H.	Jr. Ind. Mgt.	316 South	Wilmington, N. C.
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Gaskins, Warden W.	So. Cer. E.	206 Watauga, Box 3024	New Bern, N. C.
Gaston, William F.	Sr. Tex. C&D.	2508 Vanderbilt, Box 5551	Belmont, N. C.
Gatewood, C. I.	Sr. B. Ad.	333 1911, Box 3813	Pelham, N. C.
Gattis, A. R.	Sr. Poul.	122 7th, Box 3322	Burlington, N. C.
Gauger, John F.	Fr. For.	101½ Chamberlain St.	Winsted, Conn.
Gaw, John G.	Jr. M. E.	Y. M. C. A.	Greensboro, N. C.
Gee, A. N.	Sr. Tex.	125 Woodburn Rd.	Shelby, N. C.
George, Roscoe Bowman	So. Tex.	205 7th, Box 3337	Mount Airy, N. C.
Gerlock, Amel Jones	Jr. For.	8 Ferndell Lane	Mt. Union, Pa.
Gery, Lyman E.	So. Tex.	201 7th, Box 3333	Durham, N. C.
Getsinger, John G.	Fr. Chem. E.	113 Cox Ave.	Plymouth, N. C.
Getz, George G.	Jr. E. E.	218 1911, Box 3758	New Philadelphia, O.
Gibbs, Lancy Wade	Jr. Agr. Eco.	212 7th, Box 3344	Englehard, N. C.
Gibson, Frank B.	Jr. An. Hus.	226 1911, Box 3766	Gibson, N. C.
Gibson, N. F.	Grad. Tex.	123 Forest Road	Gibson, N. C.
Gibson, Onan E.	Fr. Agr.	113 Cox Ave.	Gibson, N. C.
Gibson, Paul J.	Fr. Gen. Agr.	7 South, Box 3603	Iotla, N. C.
Gibson, Robert M., Jr.	Sr. Land. Arch.	2412 Everett Ave.	Asheville, N. C.
Gilbert, David Layton	So. Ind. Mgt.	305 Watauga, Box 3041	Dunn, N. C.
Giles, Jesse Francis	So. Gen. Agr.	113 Cox Ave.	Archdale, N. C.
Gill, Mellor A.	Fr. Chem. Eng.	311 7th, Box 3377	Hawthorne, N. J.

Name	*Classification*	*School Address*	*Home Address*
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Gilmore, John Franklin	Fr. E. E.	1806 Hillsboro St.	Oxford, N. C.
Ginsberg, Lewis A.	So. Ind. Mgt.	316 1911, Box 3796	Greensboro, N. C.
Goad, T. G.	Jr. M. E.	315 S. Boylan Ave.	Raleigh, N. C.
Goad, W. D.	Sr. M. E.	315 S. Boylan Ave.	Raleigh, N. C.
Godfry, H. D.	Spec. S & B.		
Godwin, George W.	Fr. M. E.	102 6th, Box 3238	Durham, N. C.
Going, Ralph C.	Sr. Tex. Mfg.	122 1911, Box 3722	Fieldale, Va.
Goldston, R. L., Jr.	Jr. Agr.	2305 Clark Ave.	Wake Forest, N. C.
Gomo, Kelman P.	So. Arch. E.	225 1911, Box 3765	High Point, N. C.
Goode, C. F.	So. H. S. T.	130 7th, Box 5171	Cliffside, N. C.
Goodman, A. D.	Fr. Tex.	215 South, Box 3547	High Point, N. C.
Goodman, V. J.	So. Agr. Spec.	306 1911, Box 3786	Concord, N. C.
Goodwin, Richard N.	Jr. M. E.	117 1911, Box 3717	Salemburg, N. C.
Gore, Fred C.	Jr. Chem. E.	2407 Clark Ave.	Weldon, N. C.
Grady, Robert H.	So. M. E.	334 1911, Box 3814	Kinston, N. C.
Graham, R. B., Jr.	So. Tex.	103 Chamberlain St.	Charlotte, N. C.
Grandy, Emmett W.	Fr. Ind. Eng.	2232 Hillsboro St.	Raleigh, N. C.
Granger, William B.	Fr. Agr.	103 7th, Box 3113	Winston-Salem, N. C.
Grant, John W.	Sr. Agr. Ed.	223 7th, Box 3355	Garysburg, N. C.
Grantham, J. E.	So. Const. E.	307 1911, Box 3787	Rocky Mount, N. C.
Graves, F. W., Jr.	So. Chem. Eng.	1620 Hillsboro St., Box 5223	Mebane, N. C.
Gray, Anderson M.	Jr. For.	308 1911, 3788	Williamston, S. C.
Gray, Charles J.	Fr. Mech.E.(Aero)	329 South, Box 3592	Wilmington, N. C.
Gray, Norman H.	Fr. Cer. E.	8 Ferndell Lane	Haverhill, Mass.
Green, Allen H.	Fr. For.	203 South, Box 3535	Zebulon, N. C.
Green, Mrs. Charlotte	Sr. Biol.		
Greene, Eleanor M.	Sr. Tex.	712 W. North St.	Raleigh, N. C.
Green, Paul	So. M. E.	205 Watauga, Box 3023	Sylva, N. C.
Green, William S., Jr.	Fr. E. E.	321 7th, Box 3387	Henderson, N. C.
Greene, William W.	Fr. E. E.	203 4th, Box 3121	Henderson, N. C.
Greer, T. G., Jr.	Fr. Tex.	208 South, Box 3540	Thomasville, N. C.
Gregory, I. C.	Jr. Agr.	131 1911, Box 3731	Greensboro, N. C.
Gresham, Harry R.	Fr. Ag. Ed.	523 N. Bloodworth St.	Beulaville, N. C.
Gresham, Sam T., Jr.	Fr. Mec. E.	2306 Fairview Road	Raleigh, N. C.
Griffin, A. H.	Sr. Ind. Mgt.	1922 Hillsboro St.	Edenton, N. C.
Griffin, Billy	So. For.	213 Woodburn Road	Nashville, N. C.
Griffin, Hugh T.	Fr. Agr.	2626 Lassiter Road	Marshville, N. C.
Griffin, James H.	Jr. For.	116 7th, Box 3316	Asheville, N. C.
Griffin, John Henry	Jr. Chem. E.	215 Park Ave.	Monroe, N. C.
Griffin, R. J.	Grad. Tex.	1408 Hillsboro St.	Wilmington, N. C.
Griffin, William B.	Fr. Arch. Eng.	203 6th, Box 3251	Goldsboro, N. C.
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Griffiths, Phillip A.	So. For.	2300 Bedford Ave.	Raleigh, N. C.
Grigsby, W. A.	Sr. Ch. Eng.	312 1911, Box 3792	Asheville, N. C.
Grine, Edward E., Jr.	Fr. Tex.	201 South, 3533	Floreffe, Pa.
Gross, Harold I.	Fr. Tex.	107 6th, Box 3243	Kinston, N. C.
Guerrant, E. L.	Jr. M. E.	135 1911, Box 3735	Winston-Salem, N. C.
Guillet, A. M., Jr.	Sr. Tex.	2302 Hillsboro St.	Charlotte, N. C.
Gurley, W. H., Jr.	So. M. E.	Power Plant, Box 5614	Sanford, N. C.
Guy, Edwin C., Jr.	Fr. G. E.	232 South, Box 3564	Newland, N. C.
Guzas, John V.	Sr. H. S. T.	103 Chamberlain St.	New York, N. Y.
Gwaltney, H. G.	So. E. E.	203 1911, Box 3743	Winston-Salem, N. C.
Gwaltney, M. Luke	Fr. E. E.	307 6th, Box 3743	Taylorsville, N. C.
Hagen, George H.	Fr. C. E.	120 Harding St.	Raleigh, N. C.
Hadlow, W. L.	Jr. M. E.		
Hales, Dorothaleen	Jr. H. S. T.	5 S. Person St.	Raleigh, N. C.
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Hall, Commodore Perry	So. Agr.	2 Maiden Lane	Horse Shoe, N. C.
Hall, James C.	Sr. E. E.	2612 Clark Ave.	Autryville, N. C.
Hall, Kenneth	Fr. Cer.	101 South, Box 3501	Norris, Tenn.
Hall, Lyle Neil	So. Agr. Ed.	College Dairy House Box 5127	Salisbury, N. C.
Halperin, M.	Jr. Ind. Eng.	213 Woodburn Road	Baltimore, Md.
Hamilton, James E.	So. Ind. Mft.	305 Watauga, Box 3041	Godwin, N. C.
Hamilton, John H.	So. For.	110 E. Lane St.	Raleigh, N. C.
Hamlet, Mary Elizabeth	Grad. R. Soc.	118 Polk St.	Raleigh, N. C.
Hamlin, Joe, Jr.	So. Spec. Agr.	235 1911, Box 3775	High Point, N. C.
Hammond, J. H.	Jr. Land. Arch.		
Hampton, W. R., Jr.	Fr. M. E.	206 6th, Box 3254	Plymouth, N. C.
Hamrick, J. L., Jr.	Jr. Chem. E.	7 Maiden Lane	Ellenboro, N. C.
Handy, Russell P.	Fr. Ec. Agr.	228 South, Box 3560	Grassy Creek, N. C.
Hanna, George V.	Fr. Tex.	121 South, Box 3521	Shelby, N. C.
Hanna, Marcus W.	Sr. Arch. E.	15 Maiden Lane	Shelby, N. C.
Harden, J. H.	So. E. E.	18 South, Box 3614	Graham, N. C.
Harper, Derward B.	Fr. Gen. Agr.	Poultry Plant	Garner, N. C.
Harper, Herman E.	Fr. Agr. Ed.	6 South, Box 3602	Deep Run, N. C.
Harper, Thomas J.	Sr. H. S. T.	1100 Glenwood Ave.	Harper, W. Va.
Harper, W. M.	So. Ag. Ed.	16 N. Dawson St.	Garner, N. C.
Harrell, A. J.	Sr. An. Poul.	114 1911, Box 3714	Potecasi, N. C.
Harris, B. Franklin	Fr. Chem. E.	107 4th, Box 3117	Henderson, N. C.
Harris, Charles D.	So. For.	332 1911, Box 3812	Lexington, N. C.
Harris, Charles J.	Fr. For.	209 5th, Box 3221	Mebane, N. C.
Harris, D. Carl	Fr. Tex.	205 6th, Box 3253	Thomasville, N. C.
Harris, George V.	Fr. C. E.	108 6th, Box 3244	Hawthorne, N. J.
Harris, J. H.	Jr. Land. Arch.	R.F.D. 3, Raleigh	Siler City, N. C.
Harris, John W.	Jr. Ch. E.	106 Watauga, Box 3006	Wadeville, N. C.
Harris, M. F.	Fr. Ind. Tex.	1818 Glenwood Ave.	Raleigh, N. C.
Harris, Robert P.	Sr. C. E.	220 N. East St.	Raleigh, N. C.
Harrison, H. L.	Fr. Chem. Eng.	211 Hawthorn Road	Scotland Neck, N. C.
Hart, Earle C., Jr.	So. Ch. E.	215 7th, Box 3347	Hartford, Conn.
Hart, W. E.	Sr. B. Ad.	302 Watauga, Box 3038	Grifton, N. C.
Hartley, H. J.	So. For.	116 Woodburn Road	Clifton Forge, Va.
Haskell, Clarence G.	Fr. Tex.	121 7th, Box 3321	New Bedford, Mass.
Hassell, C. B., Jr.	Fr. Ind. Eng.	112 5th, Box 3212	Williamston, N. C.
Hassell, J. J., Jr.	Fr. Chem. E.	1806 Hillsboro	Roper, N. C.
Hattaway, Alexander C.	Fr. Tex.	317 7th, Box 3383	Greensboro, N. C.
Havelka, John Jr.	Fr. For.	319 7th, Box 3385	Bay Shore, N. Y.
Hawes, Stephen J.	So. Tex. C.&D.	103 Chamberlain St.	Charlotte, N. C.
Hawkins, C. C.	Sr. B. Ad.	210 Watauga, Box 3028	Selma, N. C.
Hawkins, O. Berval, Jr.	Sr. Chem.	215 Watauga, Box 3033	Mt. Olive, N. C.
Hawkins, W. E., Jr.	So. Ind. Mgt.	310 E. Park Drive	Raleigh, N. C.
Hawkins, William J.	Fr. Tex.	222 Park Ave.	Weldon, N. C.
Hayden, N. H.	Jr. H. S. T.	106 7th, Box 5332	Youngstown, Ohio.
Haynes, Jack Calvin	Fr. E. E.	317 South, Box 3581	Winston-Salem, N. C.
Hayworth, Charles E.	Sr. Tex.	1922 Hillsboro St.	High Point, N. C.
Heatherley, J. R.	So. Ind. Arts	U. S. Nat. Cemetery	Raleigh, N. C.
Heilman, E. J., III	Jr. Tex.	115, Box 3015	Phoenixville, Pa.
Hein, Albert F.	Jr. For.	230 7th, Box 3362	New York, N. Y.
Helms, Bob Grene	So. Ag. Ed.	311 Hillcrest Road	Marshville, N. C.
Helms, E. V.	So. Tex.	112 7th, Box 5204	Charlotte, N. C.
Heltzel, John B.	Jr. For.	315 1911, Box 3795	Wardensville, W. Va.
Hemmings, Jim Dan	Fr. Agr. Ed.	101 4th, Box 3111	Dobson, N. C.
Henderson, J. V., Jr.	So. E. E.	308 Watauga, Box 3044	Monroe, N. C.
Henderson, T. B., Jr.	Jr. For.	326 1911, Box 3806	Williamsburg, Va.

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Hendren, Travis Edward	Fr. Agr.	115 Woodburn Road	Hiddenite, N. C.
Hendrix, Ed E.	Fr. Mech. E.	314 7th, Box 3380	Concord, N. C.
Hendrix, Harry M., Jr.	Fr. Tex. Mfg.	303 6th, Box 3263	Beaufort, N. C.
Hendrix, Walter J.	Jr. For.	112 5th, Box 3212	Asheville, N. C.
Henley, Eugene P.	Fr. Tex.	112 South, Box 3512	Durham, N. C.
Hennessy, James Patrick	Fr. Ind. Arts	333 7th, Box 3399	New Rochelle, N. Y.
Henry, Richard Milton	So. For.	118 Hillcrest Road	Russellville, Ark.
Heritage, E. H.	Jr. Chem. E.	700 W. Jones St.	Raleigh, N. C.
Herring, George H.	So. Ag. Sp.	111 Watauga, Box 3011	Goldsboro, N. C.
Hertz, Norman S.	So. Chem. Eng.	217 7th, Box 3349	Long Branch, N. J.
Hickok, Benton T.	Sr. Arch. E.	3 Maiden Lane	Wytheville, Va.
Hicks, J. Frank	Fr. M. E.	120 Forest Road	High Point, N. C.
Higgins, Willard Donald	Fr. For.	232 South, Box 3564	Mars Hill, N. C.
Hill, James R.	Sr. Tex.	207 4th, Box 3125	Greensboro, N. C.
Hill, L. O.	So. Ag.	311 Watauga, Box 3047	Vanceboro, N. C.
Hill, Palmer Griffin	Fr. Tex. Mfg.	Gymnasium, Box 5402	Rocky Mount, N. C.
Hill, Royce P.	Fr. Gen. Agr.	110 5th, Box 3210	Snow Hill, N. C.
Hill, Wilson M.	Sr. For.	223 1911, Box 3763	Thomasville, N. C.
Hines, J. B.	So. Tex.	315 7th, Box 5171	Winston-Salem, N. C.
Hines, John Charles	Jr. C. E.	309 Watauga, Box 3045	Rowland, N. C.
Hines, Richard C.	Fr. Tex. Mfg.	323 South, Box 3587	Spartanburg, S. C.
Hines, Thomas Ira, Jr.	Jr. H. S. T.	229 1911, Box 3769	Winston-Salem, N. C.
Hinman, Emory B.	Fr. Aero. Eng.	305 5th, Box 3229	Warsaw, N. C.
Hinshaw, L. M.	So. M. E. (Aero.)	140 1911, Box 3740	Winston-Salem, N. C.
Hinshaw, W. Harold	So. M. E.	240 1911, Box 3780	Greensboro, N. C.
Hobbs, Emory Lee	Fr. Aero.	222 Park Ave.	Delco, N. C.
Hobbs, G. R.	Fr. Agr. Ed.	222 Park Ave.	Delco, N. C.
Hocutt, R. H.	Sr. Aero. Eng.	201 7th, Box 3333	Rocky Mount, N. C.
Hodges, J. M.	Fr. Mech. Eng.	115 Woodburn Road	New Bern, N. C.
Hodgkin, R. G., Jr.	Sr. Tex.	1301 Hillsboro	Wilmington, N. C.
Hoek, Marinus	So. H. S. T.	103 7th, Box 3303	Long Island, N. Y.
Hoggard, Edward Solon, Jr.	Sr. Tex. Mfg.	115 Watauga, Box 3015	Charlotte, N. C.
Hoke, George Bland	For.	1816 Park Drive	Williamsburg, Va.
Holbrook, Harold M.	Gen. Agr.	216 South, Box 3548	Huntersville, N. C.
Holbrook, J. C.	So. M. E.	2220 Hillsboro St.	Albemarle, N. C.
Holcombe, James H.	Fr. S. Engr.	308 7th, Box 3374	Fayetteville, N. C.
Holeman, W. B.	Jr. Ind. Mgt.	333 1911, Box 3813	Oxford, N. C.
Hollamon, J. S.	Jr. Ag. Spec.	13 Polk Hall, Box 5127	Farmville, N. C.
Holland, Locke	Fr. Agr.	Infirmary	Charles, N. C.
Holland, Otho Lee	Fr. E. E.	2816 Bedford Ave.	Turkey, N. C.
Holland, Tyree B.	So. Agr.	Raleigh, N. C., R. 4	Holly Springs, N. C.
Hollar, Zach	Fr. Tex.	306 6th, Box 3266	Hickory, N. C.
Holler, D. F.	Jr. Agr.	6 Enterprise St.	Union Mills, N. C.
Hollis, James W., Jr.	So. M. E.	123 Chamberlain St.	Laurinburg, N. C.
Hollis, M. F.	Fr. For.	215 Park Ave.	Winchester, Va.
Holloman, A. C.	Fr. Agr.	111 5th, Box 3211	Farmville, N. C.
Holloway, T. H., Jr.	So. Ind. Mgt.	106 Logan Court	Durham, N. C.
Holloway, Virgil Lee	So. Agr.	328 1911, Box 3808	Sioux, N. C.
Hollowell, C. T.	So. Chem. E.	138 1911, Box 3738	Edenton, N. C.
Holmes, Sterling C.	Fr. M. E.	304 4th, 3130	Cambridge, N. Y.
Holoman, S. B.	Sr. B. Ad.	2123 Woodland Ave.	Raleigh, N. C.
Holt, George A.	Sr. Tex. W&D.	1922 Hillsboro St.	Burlington, N. C.
Honeycutt, A. J., Jr.	So. For.	208 Chamberlain St.	Raleigh, N. C.
Honeycutt, Lillian Mae	Sr. H. S. T.	Route 1	Raleigh, N. C.
Hood, Robin Pope	Jr. Ind. Mgt.	2210 Ridgecrest St.	Raleigh, N. C.
Hood, Sam S.	So. Ind. Mgt.	2210 Ridgecrest St.	Raleigh, N. C.
Hood, W. D., Jr.	Fr. E. E.	201 4th, Box 3119	Smithfield, N. C.

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Hooks, William Harvey	Jr. Agr.	128 1911, Box 3728	Fremont, N. C.
Hoover, Paul A.	Fr. Ch. E.	2202 Hillsboro St.	Raleigh, N. C.
Horne, George R.	So. Tex.	101 1911, Box 3710	Spencer, N. C.
Horne, John William	Fr. Gen. Agr.	20 Bagwell Ave.	Peachland, N. C.
Horney, E. S.	Jr. Tex. C&D.	211 Groveland Ave.	Greensboro, N. C.
Horowitz, Sol.	Jr. For.	212 1911, Box 3752	New York, N. Y.
Horton, Archibald, Jr.	Fr. E. E.	1708 Park Drive	Raleigh, N. C.
Horton, D. M.	Jr. Ind. Mgt.	1408 Hillsboro St.	Raleigh, N. C.
Horton, Roy Lee, Jr.	Fr. E. E.	Route 4	Raleigh, N. C.
Hough, G. D., Jr.	Fr. Agr. Ed.	119 Ashe Ave.	Matthews, N. C.
Howard, Joe N.	Fr. Land. Arch.	208 Watauga, Box 3026	Greensboro, N. C.
Howell, Clarence F.	So. Aero. Eng.	219 1911, Box 3759	Whitakers, N. C.
Howell, Malcolm T.	Jr. Ind. Arts.	203 Watauga, Box 3021	Greensboro, N. C.
Howerton, T. M., Jr.	Jr. For.	207 South, Box 5451	Asheville, N. C.
Howland, Leland M.	Sr. Tex. W&D.	204 7th, Box 3336	Henderson, N. C.
Hoyle, Marion Hudson, Jr.	Fr. E. E.	115 South, Box 3515	Cooleemee, N. C.
Hoyle, Max N.	So. Tex.	201 1911, Box 3741	Charlotte, N. C.
Hoyle, William F.	Fr. For.	203 South, Box 3535	Zebulon, N. C.
Hubbard, James B.	Jr. For.	112 Watauga, Box 3012	Williamsburg, Va.
Hubbard, R. T.	So. Agr.	209 1911, Box 3749	Spray, N. C.
Hube, William Karl	So. For.	116 Woodburn Road	Wise, Va.
Hucks, Philip Jerome	Fr. For.	206 South, Box 3538	Ft. Pierce, Fla.
Huck, W. J.	Fr. Ind. Arts.	105 7th, Box 3305	Newport, Ky.
Hudson, Edwin C., Jr.	Fr. Chem. E.	109 6th, Box 3245	Wilmington, N. C.
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Hughes, Robert Archibald	Fr. Agr.	309 7th, Box 3375	Parkton, N. C.
Hulak, S. M.	Jr. Chem. E.	132 1911, Box 3732	Burgaw, N. C.
Hunt, E. A., Jr.	So. For.	314 1911, Box 3794	Oxford, N. C.
Hunt, J. B., Jr.	Fr. Agr.	114 Horne St.	Raleigh, N. C.
Hunt, Richard	So. M. E.	215 7th, Box 3347	Wake Forest, N. C.
Hunter, George W.	So. For.	525 N. East St.	Raleigh, N. C.
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Irly, Pierce B.	Fr. Cer. E.	1913 McCarthy St.	Raleigh, N. C.
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Jameson, T. M., Jr.	So. For.	8 Ferndell Lane	Easley, S. C.
Jaskwhich, Edward	Jr. Tex.	102 7th, Box 3302	Kenosha, Wis.
Jenkins, B. P., Jr.	So. G. Agr.	231 1911, Box 3771	Shelby, N. C.
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Mathewson, C.	Grad. For.	2300 Bedford Ave.	
Mathis, Asa Earl, Jr.	Fr. Chem. Eng.	109 6th, Box 3245	Wilmington, N. C.
Matthews, Charles M.	Jr. For.	12 Rosemary St.	Albuquerque, N. M.
Matthews, Edwin Rea	So. Tex.	222 7th, Box 3354	Jonesboro, N. C.
Matthews, Joseph A.	Jr. For.	4th Apt., College Court	Vass, N. C.
Matthews, Mary E.	Sr. Biol.	507 N. Wilmington St.	Raleigh, N. C.
Matthis, R. L.	So. Gen. Ag.	201 Park Ave.	Clinton, N. C.
Mattocks, Averette N.	Fr. M. Eng.	102 5th, Box 2202	Greensboro, N. C.
Mattson, Axel Ture	Fr. Aero. Eng.	307 South, Box 3571	East Hampton, N. Y.

Name	*Classification*	*School Address*	*Home Address*
Matys, Joseph	Jr. For.	4 Hope St.	Clifton, N. J.
Mauney, W. A.	So. Tex. Mfg.	114 Watauga, Box 3014	Lincolnton, N. C.
Maupin, Addison	So. Cer.	Clark Ave.	Raleigh, N. C.
Mauro, Herald Michael	Fr. M. E.	2004 Hillsboro St.	Walsenburg, Colo.
Maxey, Robert L., Jr.	Fr. For.	528 N. East St.	Raleigh, N. C.
May, L. T.	Fr. Ch. E.	223 W. Davie St.	Henderson, N. C.
May, Samuel R., Jr.	Fr. Tex. Mfg.	326 South, Box 3590	Spring Hope, N. C.
Mayfield, Ben H.	Jr. For.	217 Watauga, Box 3035	Murphy, N. C.
Mayfield, Frank D.	Jr. For.	217 Watauga, Box 3035	Murphy, N. C.
Mayo, Henry H.	Sr. Tex.	311 N. Boundary St.	Raleigh, N. C.
Mayo, Howard A.	Jr. Tex. Mfg.	311 N. Boundary St.	Raleigh, N. C.
Mayo, Selz C., Jr.	Grad. Ag. Ec.	Box 5121	
Mayo, Wilbur L.	So. M. E.	2202 Hillsboro St.	Greenville, N. C.
Mayton, Robert Leslie	So. H. S. T.	At home	Cary, N. C.
Meacham, Dan W.	Fr. Mech. Aero.	302 South, Box 3566	Hamlet, N. C.
Meadows, J. A.	So. Gen. Ag.	1301 Hillsboro St.	New Bern, N. C.
Medlin, William Tracy	Fr. Ag. Ed.	501 W. Whitaker Mill R.	Raleigh, N. C.
Meekins, M. H.	Sr. M. E.	102 1911, Box 3702	Wanchese, N. C.
Meeks. John William	Fr. M. E.	107 5th, Box 3207	Stoneville, N. C.
Mehaffey, Glenn W.	Fr. For.	103 4th, Box 3113	Hendersonville, N. C.
Melton, James S.	So. M. E. (Aero.)	College Dining Hall	Hendersonville, N. C.
Mendenhall, W. C., Jr.	Fr. M. E.	6 Hope St.	Spencer, N. C.
Mercer, C. D.	Sr. B. Ad.	307 Watauga, Box 3043	Chadbourn, N. C.
Merrill, C. Norman	Fr. Ag.		Augusta, Maine
Merritt, Percy D.	Fr. Tex.	17 South, Box 3613	Rose Hill, N. C.
Michael, H. Therrell	Sr. Ch. E.	2220 Hillsboro St.	Pleasant Garden, N. C.
Michael, Joe E.	Fr. For.	321 South, Box 3538	Wadesboro, N. C.
Middleton, Henry M., Jr.	Jr. Tex. Mfg.	201 Park Ave.	Warsaw, N. C.
Miles, Kelly G.	Grad. Chem. E.	301 Park Ave.	Miles, N. C.
Milholland, J. L., Jr.	Fr. E. E.	218 South, Box 3550	Statesville, N. C.
Miller, Carr L.	Fr. Mech.	103 South, Box 3503	Rockwell, N. C.
Miller, David Charles	Fr. Agr. Ed.	5 Hope St.	Warsaw, N. C.
Miller, John C.	So. Chem.	2407 Clark Ave.	Devon, Conn.
Miller, Johnnie F.	Fr. Agr.	191 Chamberlain St.	Raleigh, N. C.
Miller, M. G.	Jr. B. Ad.	103 Chamberlain St.	Shelby, N. C.
Miller, William A.	Fr. Ag.	113 Cox Ave.	Salisbury, N. C.
Milloway, William Hugh	Jr. E. E.	309 7th, Box 3375	Greensboro, N. C.
Mills, Rae Henry	Sr. M. E.	4 Maiden Lane	Chapel Hill, N. C.
Mills, W. L.	Sr. Tex.	2604 Hillsboro St.	Apex, N. C.
Millsaps, Steve	Fr. Gen. Agr.	217 South, Box 3549	Asheboro, N. C.
Mimms, Thomas C.	Sr. Ag. Ec.	8 Dixie Drive	Raleigh, N. C.
Mintz, LeRoy	So. Ag. Econ.	6 Hope Street	Shallotte, N. C.
Mitchell, Richard H.	Fr. Mech. Eng.	2901 Hillsboro St., Box 5024	Raleigh, N. C.
Mitchell, Robert P.	Fr. C. E.	304 7th, Box 3370	Reidsville, N. C.
Moir, T. R., Jr.	Jr. Tex.	133 1911, Box 3733	Walkertown, N. C.
Monroe, Raymond, Jr.	Jr. M. E.	115 Park Ave.	Laurinburg, N. C.
Monroe, W. C.	So. Agr.	409 Chamberlain St.	Council, N. C.
Montague, Garland A.	Fr. Ch. E.	Route 5	Raleigh, N. C.
Moore, A. M., Jr.	Fr. Tex.	504 Oakwood Ave.	Raleigh, N. C.
Moore, C. N.	Fr. M. E.	207 5th, Box 3219	Washington, N. C.
Moore, George Akers, Jr.	Jr. Ind. Mgt.	2107 Woodland Ave.	Raleigh, N. C.
Moore, George Felix	Sr. Agr. Ed.	Box 128	Cary, N. C.
Moore, Horace H.	Fr. For.	102 6th, Box 3238	Kinston, N. C.
Moore, James E., Jr.	So. Chem. E.	603 Holt St.	Raleigh, N. C.
Moore, Joseph D.	Sr. Tex.	124 South, Box 3524	Forest City, N. C.
Moore, W. S.	So. Agr.	1707 Park Drive	Apex, N. C.
Moorefield, Jesse P.	So. For.	123 Brooks Ave.	Greensboro, N. C.

Name	Classification	School Address	Home Address
Morgan, D. F.	Sr. Hort.	234 1911, Box 3774	Monroe, N. C.
Morgan, Hubert L.	So. E. E.	317 Watauga, Box 3053	Canton, N. C.
Morrah, David, Jr.	Grad. Arch. Eng.	101 Fifth, Box 3201	Greensboro, N. C.
Morris, H. D.	So. Agr. Spec.	402 Horne St., Box 5394	Raleigh, N. C.
Morris, J. W.	Fr. Chem. E.	313 South, Box 3577	Canton, N. C.
Morris, Thomas J.	Sr. Tex.	203 Chamberlain St.	Colerain, N. C.
Morrisette, Philip G.	Fr. C. E.	308 4th, Box 3134	Camden, N. C.
Morrison, Edmund B.	Fr. Mech. Engr.	218 South, Box 3550	Charlotte, N. C.
Morrison, R. H., Jr.	Jr. C. E.	8 Maiden Lane	Charlotte, N. C.
Moseley, Cuthgert L., Jr.	Fr. E. E.	617 W. Jones St.	Raleigh, N. C.
Moser, Edwin	Sr. Tex.	202 1911, Box 3742	Monroe, N. C.
Moss, Samuel Burns	So. Chem.	120 Forest Road	Albemarle, N. C.
Mucheck, Joe F.	Fr. Ind. Eng.	110 6th, Box 3246	Benwood, W. Va.
Mullen, H. P.	So. Tex.	204 Watauga, Box 3022	Lincolnton, N. C.
Mundstock, James E.	So. For.	109 1911, Box 3709	Highland Park, Ill.
Murdoch, Robert B.	Sr. Tex.	21 Enterprise St.	Salisbury, N. C.
Murdoch, Roger W.	So. Gen. Agr.	103 Harrison Ave.	Troutman, N. C.
Murphy, George E.	Jr. H. S. T.	123 7th, Box 5281	Springfield, Mass.
Murphy, George R., Jr.	Fr. Tex.	206 South, Box 3538	Asheville, N. C.
Murphy, Julian	Fr. Tex.	206 South, Box 3538	Asheville, N. C.
Murphy, William F.	Fr. For.	333 7th, Box 3399	Portland, Maine
Murray, James L.	Fr. Aero. En.	322 7th, Box 3388	Newton, N. C.
Murray, Raymond A.	Sr. Const. E.	232 7th, Box 3364	Linden, N. J.
Muse, James B., Jr.	Fr. Dairying	311 6th, Box 3271	Carthage, N. C.
Muse, J. B., Jr.	So. M. E.	115 Park Ave.	Laurinburg, N. C.
Musso, Bernard J.	Fr. M. E.	2004 Hillsboro St.	Walsenburg, Colo.
Myers, M. Gorrell, Jr.	Jr. E. E.	230 1911, Box 3770	Winston-Salem, N. C.
Myers, Norris H.	Fr. C. E.	313 7th, Box 3379	Port Chester, N. Y.
Myers, Raymond	So. M. E.	2718 Clark Ave.	Biltmore, N. C.
Nading, H. A., Jr.	Jr. Chem. E.	239 1911, Box 3769	Winston-Salem, N. C.
Nance, Thurman Fletus	Fr. Ag. Ec.	314 South, Box 3578	Lexington, N. C.
Nass, Harold	Fr. Tex.	323 7th, Box 3389	New York, N. Y.
Nease, Allen D.	Jr. For.	903 E. Lenoir St.	Savannah, Ga.
Neikirk, J. O.	Jr. Tex.	310 1911, Box 3790	Charlotte, N. C.
Nelson, Leonard D.	Jr. Ind. Mgt.	1710 Hillsboro St.	Washington, N. C.
Nelson, Robert M.	So. For.	125 Woodburn Road	Chambersburg, Pa.
Nelson, Samuel O.	Fr. For.	125 Woodburn Road	Chambersburg, Pa.
Newcomb, F. D.	Sr. Chem. E.	1710 Hillsboro St., Box 5065	Wilmington, N. C.
Newell, Raymond	So. Chem. E.	134 1911, Box 3734	Scotland Neck, N. C.
Newlin, Jesse B.	So. Agr.	101 Watauga, Box 3001	Mebane, N. C.
Newsome, Joe L.	Sr. Ind. Mgt.	125 1911, Box 3725	Fremont, N. C.
Newsom, R. Norwood	Fr. E. E.	125 Woodburn Road	La Grange, N. C.
Nichols, Antrine	Jr. Chem.	2304 Fairview Road	Raleigh, N. C.
Nichols, E. Byron, Jr.	Fr. M. E.	303 6th, Box 3263	Morristown, N. J.
Nicholson, J. T.	Sr. Ch. E.	1710 Hillsboro St., Box 5065	Winston-Salem, N. C.
Nicholson, Robert L.	Jr. For.	126 Forest Road	Graham, N. C.
Nicholson, Russell C.	Sr. H. S. T.	2309 Lake Drive	Raleigh, N. C.
Nickels, W. W.	So. C. E.	422 Cutler St.	Raleigh, N. C.
Niswonger, George B.	Fr. E. E.	308 Forest Road	Raleigh, N. C.
Noble, G. G.	Fr. Agr.	319 South, Box 3583	Atkinson, N. C.
Nooe, Henry R., Jr.	Fr. E. E.	3 South, Box 3599	Pittsboro, N. C.
Norlander, C. D.	Sr. Chem. E.	6 Ferndell Lane	New Bedford, Mass.
Norman, George E., Jr.	So. Tex.	311 1911, Box 3719	Charlotte, N. C.
Norman, Roger A.	Jr. Ind. Eng.	120 N. Boylan Ave.	Bath, N. C.
Norwood, U. S.	Jr. Tex.	308 7th, Box 3374	Norwood, N. C.
Novick, Walter C.	Fr. M. E.	18 South, Box 3614	Frockville, Pa.
Noyes, Robert J., Jr.	Fr. Cer. Eng.	323 7th, Box 3389	Marion, N. C.

Name	Classification	School Address	Home Address
O'Berry, John T., Jr.	Jr. Agr.	10 Enterprise St.	Dudley, N. C.
Obst, Paul M.	Sr. For.	120 1911, Box 3720	Union City, Conn.
Odum, Lloyd H.	Fr. M.E. (Aero)	11 South, Box 3607	Lumberton, N. C.
Odom, Percy H., Jr.	So. Agr. Ec.	307 Watauga, Box 3043	Clinton, N. C.
Ogletree, John W.	Jr. Tex.	204 7th, Box 3335	Roanoke Rap's, N. C.
Oliver, Alfred A.	Fr. Tex.	307 4th, Box 3133	High Point, N. C.
Oliver, A. S., Jr.	Jr. Chem.	707 Professional Bldg.	Raleigh, N. C.
Oliver, G. M.	Grad. Tex.	5 Hope St.	Yanceyville, N. C.
Oliver, R. L.	So. Biol.	2627 Fairview Road	Raleigh, N. C.
Ormond, Jack J.	So. Tex.	6 Ferndell Lane. Box 5393	Kings Mt., N. C.
Orr, Ernest Neal	So. E. E.	224 1911, Box 3764	Charlotte, N. C.
Osborne, B. L.	Fr. Agr.	239 1911, Box 3779	Arden, N. C.
Osborne, Thomas F.	Sr. Dairy Mfg.	13 Polk Hall, Box 5127	Arden, N. C.
Osborne, Woodie M.	So. Agr. Ec.	117 Woodburn Road	Stanfield, N. C.
Osiecki, Edward W.	Fr. Tex.	326 7th, Box 3392	Perth Amboy, N. J.
Overcash, Jean P.	So. Gen. Agr.	340 1911, Box 3820	Kannapolis, N. C.
Overman, Harold S., Jr.	So. M. E. (Aero.)	126 1911, Box 3726	Elizabeth City, N. C.
Owen, Edwin B.	Fr. Chem. E.	131 Hawthorn Rd.	Raleigh, N. C.
Owen, J. Clarke	Sr. E. E.	203 Chamberlain St.	Spruce Pine, N. C.
Owen, Margaret	Jr. H. S. T.	131 Hawthorn Road	Raleigh, N. C.
Owens, C. W.	Grad. Cer. Eng.	118 Forest Road	Anniston, Ala.
Owens, Herman Alexander	Fr. Chem. E.	318 South, Box 3582	Rocky Mount, N. C.
Owens, Lloyd B.	Sr. B. Ad.	2314 Hillsboro St.	Raleigh, N. C.
Page, Cole L.	Fr. For.	Country Club Drive	Fairmont, N. C.
Page, Dalton D.	Fr. E. E.	Route 5	Raleigh, N. C.
Page, W. J.	Fr. Agr.	27 E. Dixie Drive	Autryville, N. C.
Palm, I. A.	Jr. Tex.	1720 Hillsboro St.	Mt. Vernon, N. Y.
Palmer, Gus	So. Cer. E.	2513 Clark Ave.	Henderson, N. C.
Palmer, James N.	Fr. For.	211 5th, Box 3223	Waynesville, N. C.
Palmer, L. Charles	So. Gen. Agr.	2310 Hillsboro St.	Lawndale, N. C.
Palmer, Marion C.	Jr. Hort.	303 1911, Box 3783	Tryon, N. C.
Palmer, W. Riley	So. Gen. Agr.	127 1911, Box 3727	Clyde, N. C.
Parham, Dexter	Sr. Chem. E.	2230 Hillsboro St.	Asheville, N. C.
Park, A. P.	Sr. Gen. Bus.	224 Woodburn Road	Raleigh, N. C.
Parker, Dalton M.	Sr. For.	120 1911, Box 3720	Sunbury, N. C.
Parker, J. D.	Fr. For.	2 South, Box 3598	Murfreesboro, N. C.
Parker, Ralph L.	Jr. Tex. C&D.	103 Chamberlain St.	Franklinton, N. C.
Parker, Wright F., Jr.	Fr. Gen. Agr.	118 South, Box 3518	Gibson, N. C.
Parks, Thomas F.	Fr. E. E.	123 South, Box 3523	Lenoir, N. C.
Parrish, Ed B.	So. M. E.	555 New Bern Ave.	Raleigh, N. C.
Parson, Wade	So. E. E.	129 1911, Box 3729	Roseboro, N. C.
Parsons, L. Richard	Fr. For.	319 South, Box 3583	Burlington, N. J.
Pate, Alfred A.	Fr. Tex.	Gymnasium, Box 5402	Raleigh, N. C.
Patrick, James L.	So. For.	302 Watauga, Box 3038	Grifton, N. C.
Patrick, James T.	Sr. Ind. Arts.	125 Halifax St.	Bahama, N. C.
Patton, James D.	Fr. Ag. Sp.	7 South, Box 3603	Franklin, N. C.
Pavlorsky, Andrew J.	Fr. Ind. Arts.	124 7th, Box 3324	Struthers, Ohio
Payne, J. H.	Fr. Gen. Agr.	2220 Hillsboro St.	Albion, N. Y.
Payne, M. B.	Jr. Tex.	202 7th, Box 3334	Kannapolis, N. C.
Payne, R. S.	So. M. E.	2407 Clark Ave., Box 5428	Hertford, N. C.
Payne, William M.	Fr. E. E.	310 7th, Box 3376	Taylorsville, N. C.
Peacock, William A. J.	Fr. Tex.	210 6th, Box 3258	Goldsboro, N. C.
Pearce, James L.	Fr. Ind. Arts.	606 W. Johnson St.	Raleigh, N. C.
Pearce, Mary Sue	Sr. Chem.	504 N. East St.	Raleigh, N. C.
Pearson, Richard W.	Fr. Poul. Agr.	303 South, Box 3567	Highlands, N. C.
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Name	Classification	School Address	Home Address
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Pendleton, Cecil A.	So. Tex.	228 1911, Box 3768	Roanoke Rap's, N. C.
Penland, Glenn E.	So. Tex.	2706 Vanderbilt Ave.	Asheville, N. C.
Penland, J. E.	Sr. Agr. Ec.	116 Woodburn Road	Hayesville, N. C.
Pennington, W. D.	Fr. E. E.	Dixie Trail	Nathans Creek, N. C.
Penny, Carmel R.	Fr. For.	At home	Cary, N. C.
Penny, Russell C.	Fr. M. E.	At home, Route 4	Raleigh, N. C.
Pepper, Nathan H.	Sr. H. S. T.	116 Groveland Ave.	New York, N. Y.
Perkins, Norris Lynwood	Fr. Ind. Eng.	726 W. Hargett St.	Smithfield, N. C.
Perry, Edgar Royce	So. Agr.	Dairy Barn, Box 5127	Sugar Grove, N. C.
Perry, H. G., Jr.	Sr. Tex.	1304 Hillsboro St.	Wallace, N. C.
Perry, William Ragsdale	So. Tex.	14 Enterprise St.	Greensboro, N. C.
Peters, Charles E.	Fr. Chem. Eng.	106 South, Box 3506	Grafton, Mass.
Peters, John R.	So. For.	320 1911, Box 3800	Bronx, N. Y.
Peterson, C. H.	Fr. For.	316 7th, Box 3382	Leechburg, Pa.
Peterson, Wilbert J.	Jr. H. S. T.	118 1911, Box 3718	Clinton, N. C.
Pettit, Charles, Jr.	Sr. For.	2412 Everette Ave.	Asheville, N. C.
Philbeck, Thomas E.	Jr. Chem. E.	118 1911, Box 3718	Lawndale, N. C.
Phillips, Frank N.	Jr. Const.	2718 Clark Ave, Box 5551	Hamlet, N. C.
Phillips, Will F.	So. Ind. Mgt.	324 1911, Box 3804	Winston-Salem, N. C.
Phillips, William R., Jr.	So. E. E.	Route 3	Raleigh, N. C.
Phrydas, Pete	Fr. E. E.	105 6th, Box 3241	Greensboro, N. C.
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Piepenbrok, H. F.	So. For.	1718 Park Drive	Deerfield, Ill.
Pierce, Honoree W.	So. H. S. T.	122 Ashe Ave.	Apex, N. C.
Pierce, J. C., Jr.	Fr. Agr.	228 South, Box 3560	Grassy Creek, N. C.
Pierce, James Wilson	Fr. E. E.	16 South, Box 3612	Swarthmore, Pa.
Pierce, Walter Henry	Sr. Agr. Econ.	Y. M. C. A.	Whiteville, N. C.
Piland, John E.	So. Gen. Agr.	2702 Hillsboro St.	Margarettsville, N. C.
Piloseno, Daniel A.	So. Ind. Mgt.	107 7th, Box 5192	Bellaire, Ohio
Pinkham, Jesse R.	Jr. M. E.	203 Chamberlain St.	Washington, N. C.
Pittman, Ray L.	So. Agr. Ed.	220 7th, Box 3352	Fairmont, N. C.
Pittman, Richard Moore	Sr. Chem. E.	213 1911, Box 3753	Rocky Mount, N. C.
Pitts, Joseph York	Fr. Tex.	304 5th, Box 3228	Creedmoor, N. C.
Plaster, C. C.	Jr. Tex. D&C.	114 Watauga, Box 3014	Winston-Salem, N. C.
Plaster, J. Carroll	Fr. For.	303 5th, Box 3227	Hickory, N. C.
Plummer, H. W., Jr.	Fr. For.	210 South, Box 3542	Asheville, N. C.
Poate, Edith B.	Fr. Arch. E.	131 Hawthorn Rd.	Raleigh, N. C.
Pollard, W. B., Jr.	Fr. Bio.	203 Chamberlain St.	Winton, N. C.
Pollock, C. A.	Jr. M. E.	116 Groveland Ave.	Kinston, N. C.
Pollock, D. M., Jr.	Fr. Tex.	318 1911, Box 3798	High Point, N. C.
Pollock, Robert C.	So. E. E.	227 1911, Box 3767	Kinston, N. C.
Pollock, William E.	Fr. Agr. Ec.	110 5th, Box 3210	Trenton, N. C.
Ponton, Robert A.	So. Ind. Mgt.	214 Forest Road	Raleigh, N. C.
Poole, Harry H.	Fr. C. E.	207 6th, Box 3255	Hamlet, N. C.
Poole, W. David	Sr. Chem.	2230 Hillsboro St.	Troy, N. C.
Poovey, George Avery, Jr.	Jr. Tex.	103 Watauga, Box 3003	Hickory, N. C.
Poovey, Thomas Edgar	So. Tex.	206 7th, Box 3338	Granite Falls, N. C.
Porter, I. M., Jr.	Sr. B. Ad.	700 N. East St.	Raleigh, N. C.
Porter, J. E.	Sr. Chem. E.	700 N. East St.	Raleigh, N. C.
Poteet, R. Lee	Jr. Chem. E.	2813 Hillsboro St.	Bramwell, W. Va.
Potter, A. D.	Fr. Agr.	Gymnasium	Norfolk, Va.
Pou, John W.	So. Agr.	13 Polk Hall, Box 5127	Elmwood, N. C.
Powell, Edwin D.	Sr. E. E.	328 1911, Box 3808	Burnsville, N. C.
Powell, Frank B., Jr.	Fr. I. E.	303 5th, Box 3227	Henderson, N. C.
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Powell, Ralph R.	Sr. Tex.	206 Pine St.	Raleigh, N. C.
Powell, Russell V.	So. M. E.	111 1911, Box 3711	Newport News, Va.
Powers, David Ruffin	Fr. M. E. (Aero.)	332 South, Box 3596	St. Pauls, N. C.
Power, James T.	Fr. M. E. (Aero.)	110 South, Box 3510	High Shoals, N. C.
Powers, John L., Jr.	So. Ind. Mgt.	2513 Clark Ave.	Bennettsville, S. C.
Powers, James R.	Fr. M. E. (Aero.)	1620 Scales St.	Raleigh, N. C.
Powers, Joe N.	Fr. For.	122 W. Jones St.	Raleigh, N. C.
Powers, V. C.	Grad. Agr. Ed.	119 Hawthorn Road	Northwest, Va.
Poyner, George S.	So. Chem. E.	202 Groveland Ave.	Raleigh, N. C.
Poyner, J. M.	Grad. C. E.	202 Groveland Ave.	Raleigh, N. C.
Pratt, C. Clifton	So. Gen. Agr.	231 7th, Box 3363	Winston-Salem, N. C.
Price, Charles L., Jr.	Fr. C. E.	222 Park Ave.	Whiteville, N. C.
Proctor, W. T.	Sr. An. Hus.	112 Cox Ave.	Rocky Mount, N. C.
Proffitt, James	So. Agr.	221 7th, Box 3353	Bald Creek, N. C.
Pruden, William Henry	Fr. E. E.	209 5th, Box 3221	Margarettsville, N. C.
Pugh, Edward, Jr.	Fr. Arch. E.	105 South, Box 3505	Elizabeth City, N. C.
Purifoy, Dan H.	Fr. Agr.	332 South, Box 3596	Bachelor, N. C.
Quintard, Edward A., Jr.	So. Tex.	8 Maiden Lane	Charlotte, N. C.
Rabb, Joseph Carroll	So. For.	10 Enterprise St.	Lenoir, N. C.
Rabb, Walter W.	Jr. H. S. T.	108 South, Box 3508	Lenoir, N. C.
Rabon, J. L.	Jr. Gen. Agr.	3 Hope St.	Chadbourn, N. C.
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Wood, Robert Beam	Fr. Tex.	8 South, Box 3604	Greenville, N. C.
Woodard, Frank L.	Jr. For.	620 Wills Forest Rd.	Hayesville, N. C.
Woodard, J. P.	Jr. Agr.	110 Watauga, Box 3010	Kenly, N. C.
Woodard, W. W.	Jr. M. E. (Aero)	117 Woodburn Road	Winterville, N. C.
Wooden, Warren W.	So. For.	109 7th, Box 3309	Baltimore, Md.
Woodruff, M. W.	Fr. E. E.	326 7th, Box 3392	Roselle Park, N. J.
Woody, Charles Lee	So. E. E.	104 Logan Court	Spruce Pine, N. C.
Woolard, S. Brown	So. E. E.	10 Enterprise St.	Robersonville, N. C.
Wooten, E. B.	Jr. For.	224 1911, Box 3764	La Grange, N. C.
Wooten, R. E.	Sr. Chem. E.	604 Oakwood Ave.	Cameron, N. C.
Worrell, J. A., Jr.	Fr. E. E.	310 7th, Box 3376	Rich Square, N. C.
Worth, R. Barnes	Grad. Cer. E.	104 7th, Box 5363	Raleigh, N. C.
Wrenn, Clement, Jr.	Fr. For.	108 4th, Box 3118	Southern Pines, N. C.
Wrenn, Ralph W.	Fr. C. E.	220½ Cox Ave.	Raleigh, N. C.
Wright, Charles L.	Fr. M. E.		
Wright, Chester N.	Fr. For.	103 Harrison Ave.	Highlands, N. C.
Wyatt, William R.	So. Const.	17 Enterprise St.	Rocky Mount, N. C.
Wynn, Carl	Sr. Tex.	237 1911, Box 3777	Spindale, N. C.
Yarborough, T. W.	So. Ag. Ed.	106 Glenwood Ave.	Raleigh, N. C.
Yates, Joe Ernest	So. Chem.	213 1911, Box 3753	Stony Point, N. C.
Yeager, Pearson B.	Fr. For.	313 7th, Box 3379	Mt. Union, Pa.
Yelton, Thad G.	Jr. Mfg. Tex.	2230 Hillsboro St.	Shelby, N. C.
Yelverton, Hubert D.	Fr. For.	230 South, Box 3562	Black Creek, N. C.
Yelverton, Jesse G.	Fr. For.	230 South, Box 3562	Black Creek, N. C.

Name	*Classification*		*School Address*	*Home Address*
Yelverton, John L., Jr.	Fr. Agr.	226	1911, Box 3766	Stantonsburg, N. C.
York, Merton M.	So. E. E.		Dixie Trail, Box 5474	Boothbay Harbor, Maine
York, Willia M.	Grad. Agr. Ed.			Cary, N. C.
Yost, A. Conway	Fr. Tex.	228	7th, Box 3394	Hickory, N. C.
Young, Monte M.	Fr. For.	222	South, Box 3554	Charlotte, N. C.
Younts, Otho L.	Jr. Tex.	306	New Bern Ave.	Leaksville, N. C.
Zachary, William A.	Fr. Tex. Mfg.	227	South, Box 3559	Cooleemee, N. C.
Zibelin, John R.	So. Tex.	309	1911, Box 3789	Wallace, N. C.
Ziglar, Frank C.	So. M. E.	104	1911, Box 3704	Charlotte, N. C.
Zori, Milan	Sr. H. S. T.	332	7th, Box 5281	Steubenville, Ohio

Dormitory Telephones

Fourth	9367
Fifth	9471
Sixth	9365
1911	9366
South	9461
Watauga	9368
Publications Building	4050

Fraternity Roster, 1935-36

Organization		*Address*	*Telephone*
Alpha Chi Beta	(Local)	2612 Clark Avenue	2577
Alpha Gamma Rho	(Nat'l)	116 Woodburn Road	2485
Alpha Kappa Pi	(Nat'l)	6 Ferndell Lane	3941
Alpha Lambda Tau	(Nat'l)	1710 Hillsboro Street	534
Delta Sigma Phi	(Nat'l)		
Kappa Alpha	(Nat'l)	8 Maiden Lane	4567
Kappa Sigma	(Nat'l)	21 Enterprise Street	162
Lambda Chi Alpha	(Nat'l)	2407 Clark Avenue	4140
Phi Kappa Tau	(Nat'l)	2405 Clark Avenue	1651
Pi Kappa Alpha	(Nat'l)	1922 Hillsboro Street	4743
Pi Kappa Phi	(Nat'l)	1720 Hillsboro Street	4426
Sigma Nu	(Nat'l)	1301 Hillsboro Street	3407
Sigma Phi Epsilon	(Nat'l)	103 Chamberlain Street	4266
Sigma Pi	(Nat'l)	2513 Clark Avenue	1152
Theta Kappa Nu	(Nat'l)	2230 Hillsboro Street	4329
Theta Phi	(Local)	116 Groveland Avenue	4776

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